DOCUMENT RESUME

ED 339 271 HE 025 049

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TITLE New Tools, New Times: Strategic Planning. A Seminar Focusing on Proactive Management Techniques (Chapel Hill, North Carolina, June 17-19, 1991).
SPONS AGENCY North Carolina Univ., Chapel Hill. School of Education.
PUB DATE 91
NOTE 146p.; Some appendices may not reproduce well.
PUB TYPE Guides - Non-Classroom Use (055) -- Collected Works - Conference Proceedings (021)

EDRS PRICE MF01/PC06 Plus Postage.
DESCRIPTORS Administrator Education; *Educational Administration; Higher Education; Institutions; *Long Range Planning; *Planning; Thinking Skills; Trend Analysis; Workshops
IDENTIFIERS Environmental Scanning

ABSTRACT

This handbook was designed to accompany a three-day workshop for senior administrators in higher education on proactive management techniques in higher education. Proactive management allows for anticipating change and managing uncertainty in place of crisis management or reactive actions. The workshop covered: (1) strategic thinking; (2) outside-in thinking (with examples from the corporate world); (3) how to establish a strategic trend intelligence system (steps include developing a program structure, developing a scanning taxonomy, organizing files electronically, identifying literature sources and data bases, assigning scanners to information resources, training scanners, training abstractors, using scanning newsletters and issue briefs); (4) doing an environmental vulnerability audit (steps include identifying institutional underpinnings, identifying developments that could damage those underpinnings, evaluating the likelihood of impact of these developments, reviewing threat patterns); and (5) issues' management: the role of decision (discussing implementation steps, strategy support requirements, selecting strategies, and implementation). Several worksheets for completion during the seminar are included. Also included are over 200 references and the following 5 appendixes: "Environmental Scanning at the Georgia Center for Continuing Education: A Progress Report"; an environmental scanning notebook; an issue of "Lookouts: Newsletter of Environmental Scanning of the Georgia Center for Continuing Education"; a summary of future concerns as scanned by Cardinal Stritch College (Wisconsin) and information on the seminar leaders. (JB)

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NEW TOOLS NEW TIMES

Strategic Planning

a seminar focusing on
Proactive Management Techniques

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June 17-19, 1991
The William and Ida Friday Continuing Education Center

sponsored by
School of Education
The Division of Continuing Education
The University of North Carolina at Chapel Hill

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Proactive Management Techniques

A Seminar for Senior Administrators
in Higher Education

Sponsored by the University of North Carolina at Chapel Hill
School of Education and Division of Continuing Education

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James L. Morrison and William C. Ashley

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Day 1

9:00-9:30 **Introduction/Orientation**

Participant introduction.

The format of the seminar will be a combination of presentation and small group application.

9:30-10:30 **Anticipating the Future**

Introduce and discuss Joel Barker film, *Discovering the Future: The Business of Paradigms*

10:30-10:45 Break

10:45-12:00 **Outside-In Thinking**

Critical implicit assumptions and the power of paradigms and paradigm shifts.

How major institutions and organizations have been dislocated by failing to understand how critical implicit assumptions about who they are and what their role is lead to decision screens that filter information in a way that blocks an understanding and effective acceptance of change.

12:00-1:30 Lunch

1:30-3:00 **Establishing a Strategic Trend Intelligence System: Linking the Environment to Decision-making**

How to establish and sustain a comprehensive systematic environmental scanning system:

- environmental scanning models
- how to get started

- how to organize and maintain the system to provide early warning
- criteria for selecting information sources to use
- what software is available.

3:00-3:15 Break

3:15-4:30 Global FutureScan 2000

Trends and driving forces that will shape the way we live, work, and teach in an interdependent global society to the year 2000.

5:00 Reception, The Magnolia Room

Day 2

9:00-11:00 Issues Management: The Role of a Decision Support System in Managing Uncertainty

Introduction to issue management models.

Life cycle of issues—how issues have evolved over time; how their impact has affected major organizations and industries.

Exercise: Surfacing issues facing higher education in the coming decade.

11:00-11:15 Break

11:15-12:00 Using Simulated Institutions to Apply Proactive Principles

This period will involve establishing hands-on working teams tasked to do the following:

- create a mission statement
- create goals statements.

This exercise will continue through lunch.

12:00-2:00 Lunch

2:00-4:30 **Environmental Vulnerability Audit**

Exercise: Interpret the institution's positioning in society vis-a-vis the needs and wants that it serves, the client base it relies on, the social values that support it, and its competitive positioning.

3:00-3:15 Break

Day 3

9:00-12:00 **Strategic Planning**

Exercise: The institutional planning teams will create a complete strategic planning process utilizing the previous work on critical implicit assumptions and the vulnerability audit to create a strategic direction that will serve the simulated institution over the next 3-5 years. They will:

- create a practical 3-5 year vision
- identify major internal and external constraints to the vision
- set strategic directions to overcome constraints to achieve the vision
- create a one-year tactical action plan to support the strategy.

10:30-10:45 Break

12:00-1:30 Lunch

1:30-4:00 **Strategic Planning Continued**

3:00-3:15 Break

4:00-4:30 **Wrap-up**

Preface

A major and growing concern for senior leaders today is managing while being bombarded by a turbulent and sometimes hostile external environment. At a time when domestic and international competition requires decision makers to be tougher, smarter, faster and several degrees more flexible than they have ever had to be, most are armed with skills and styles honed in and for a stable, somewhat predictable, external environment. Such stability is rarely available today, even for leading institutions. On the contrary, educational leaders now face considerable uncertainty concerning major parameters of the world in which they must operate.

The purpose of this seminar is to assist you to systematically factor the external environment into your decision making. This will be accomplished using a combination of presentations and small group applications. The objective is to enable you to gain valuable lead time to deal more effectively with critical emerging issues.

Crisis management and reactive actions are costly and disruptive to achieving institutional goals. The tools and techniques taught in this seminar will allow you to anticipate change and to manage uncertainty. Specifically, these tools are:

- ***Strategic Trend Intelligence System.*** You will learn to develop and sustain an early warning system to provide advance signals of change, gain lead time to respond or to adapt, better utilize resources, and achieve competitive advantage.

- ***Issues Management.*** You will learn how to initiate and to sustain an integrated issues management capability that includes strategic trend tracking, issue identification, issue brief analysis, prioritization of issues, facilitation of in-house steering committees and issue action teams, and writing issue reports.

- ***Environmental Vulnerability Audit (EVA).*** You will learn how to assess organizational strengths, opportunities, and vulnerabilities in light of the organization's underpinnings and dynamic emerging outside forces. EVA allows decision makers to identify subtle and frequently overlooked threats that can disrupt colleges and universities as they seek to accomplish their mission.

- ***Strategic Planning.*** You will learn how to utilize key staff members to set a vision for the institution, to develop a feasible strategic thrust that overcomes organizational obstacles and contradictions, and to set a strategic direction to make the plan a reality.

To summarize, you will learn how to

- establish a strategic direction for your institution over the next 3-5 years

- challenge implicit assumptions about your institution

- identify opportunities from the external environment on which to build

- identify threats in the external environment that, if overlooked, could interrupt or abort your institution's strategic direction
- establish strategies that factor in the dynamics of the external environment
- mobilize a one-year plan to launch strategies and organize your institution for action
- create action plans that move strategic initiatives forward
- coordinate between board and staff on the achievement of strategic direction.

In short, at the conclusion of this seminar, you should be able to serve as a consultant/facilitator/leader in your organization in developing and maintaining a strategic trend intelligence system, establishing an issues management program, conducting an environmental vulnerability audit, and leading a strategic planning exercise.

The last decade, indeed, the last year, has been an extraordinarily turbulent time in Western civilization. This has been a period when fundamental rules, the basic ways we do things, have been dramatically altered. For example, we have witnessed the end of a war in the Gulf, where, although our forces were victorious, there is a question as to whether or not we have "won the peace." We have witnessed the fall of the Berlin Wall, unification of the two Germanies, and the end of the cold war; we may see the breakup of the Soviet Union, or a military takeover. In 1992 we may see a strong European Community (EC) tradeblock that incorporates former Warsaw Pact countries. In response, we may see a North American trade-block that incorporates Canada, the U.S. and Mexico, and a Pacific trade-block that incorporates Japan *and* Russia. In a brief period of time, our world has become substantially different. In the language of futurists, we have experienced a paradigm shift.

Adam Smith (the pen name of a contemporary Wall Street economist) in *Powers of the Mind*, defined paradigm as "A shared set of assumptions. . . .the way we perceive the world. . . . [It] explains the world to us and helps us to predict its behavior."

Paradigm shifts signify dramatic collective change that upset people's worlds because the assumptions, the rules they lived by, have changed. When paradigm shifts occur, people have to learn new rules even while suffering from the effects of old rules. The build-up of U.S. Forces in Saudi Arabia, for example, was hampered by inadequate sea and airlift capability, a capability not developed sufficiently because the implications of the old paradigm called for pre-positioning war materials in Europe as opposed to ferrying them across if "the balloon went up."

To anticipate the future, we must look for signals of impending paradigm shifts. There were signals that the Berlin Wall would come down. It was well known that the sentiment for unification was strong in both West and East Germany. But the strongest signal occurred in August 1989 when Soviet leadership did not support the East German government in its attempt to stem the flow of its citizens to West Germany through Hungary and Czechoslovakia. This population flowing through the "hole in the dike" became a surge, bursting open the hole and causing the dike to collapse. The rest is history.

What are some of the signals that portend an impending paradigm shift in higher education? Consider the following:

- The cost of computer circuit components has been decreasing 25% per year.
- Today's microcomputers are as powerful as 1985 mainframes.
- Satellite teaching is increasingly viewed as a solution to productivity problems.

- The number of institutions requiring entering students (undergraduate and graduate) to own microcomputers is increasing.

- In a few years, it will be possible to have a university research library available at home (or in a dorm room) through relatively inexpensive CD ROM technology.

- Economic global competition is increasing along with a corresponding concern among business leaders that U.S. college graduates are not well prepared.

These signals imply a dramatic shift in the way we conduct college and university teaching in the next decade. It may well be that some 60 to 80% of instructional delivery will be conducted via computer, interactive multimedia, and satellite technologies. Relatively few professors, who currently rely on classroom lectures, are prepared to design instruction using these technologies. If indeed the rules for preparing and implementing instruction via these means occur, most professors will be "back to zero."

There are a number of other paradigms currently dominating higher education that may be candidates for change. Consider these:

- Faculty members keep up with the most recent developments in their field.

- American higher education is the best in the world.

- Academic programs are not accountable for their graduates' success.

What are the signals that these and other paradigms could change? If they do shift, what are the implications of these shifts for planning the future of colleges and universities?

Such questions are important to consider in planning for the future. Perhaps it is of equal importance that the senior leadership of our institutions of higher learning incorporate a systematic and rigorous planning methodology that will enhance the success of the institution in moving forward into a complex, turbulent, and uncertain future.

In recent years, a group of techniques has been developed that policy-makers may employ in establishing the strategic policy of their organizations. These techniques come under a broad category of methodology known as proactive management. A primary purpose of this methodology is to assist senior college and university leaders in reducing the level of uncertainty associated with strategic decision-making.

This handbook describes a number of these techniques. Its purpose is to describe and illustrate these techniques as they may be used in promoting proactive management in anticipation of change. Using these techniques will reduce uncertainty and promote informed decision-making.

Overview of Proactive Management Techniques

Many of today's leading-edge college and university administrators recognize that pricing, quality control, innovation, marketing and service are critical as they move into the future. They recognize that the list of outside influences is growing at an unprecedented rate from an expanding list of stakeholders. Moreover, the pace of change is faster, there are more challenges to legitimacy, traditional rules of the game are shifting, and the playing fields are not always level.

Colleges and universities must become more anticipatory in order to deal more effectively and systematically with an increasingly hostile and turbulent environment. Legislators are holding hearings on research university overhead charges, and are expressing concern about the increasing tuition and fees charged by both independent and public institutions of higher learning.

During the next decade we face more domestic and international turbulence than ever before in our history. This turbulence has the potential either to adversely impact institutions of higher education to offer them new opportunities.

To position ourselves to identify and address these issues, we must evaluate the impact on our institutions of trends and emerging issues at the local, state, national and global levels. We must also assess initiatives of various interest groups and review institutional policies and positions from the point of view of stakeholders (e.g., students, faculty, staff, trustees, legislators, employers), both friendly and hostile.

We can use proactive management techniques to consider trends and issues in a systematic, formal and organized manner in order to:

- Identify those critical external trends that will define the context within which the institution will function in the coming decade.
- Distill critical trend information into easily readable issue briefs.
- Prioritize issues.
- Decide who will take a more in depth look at the issue.
- Define the strategic significance and the strategic options available to the institution.
- Recommend strategies and tactics necessary to position the institution to avoid dislocation and/or take advantage of the issue.

In this handbook, we will define and illustrate the following proactive management techniques:

1. Strategic Thinking
2. Outside-In Thinking
3. Strategic Trend Intelligence Systems
4. Issues Management
5. Environmental Vulnerability Audits

According to Ohmae (1982), the strategic thinking process weds information and insight to allow an individual to gain a clear understanding of the particular character of each element of a situation by using non-linear brainpower to restructure the element to maximize his/her desired result with the present and emerging environment. Since phenomena and events in the real world seldom fit a linear model or true historic pattern, the strategic thinker dissects a situation into its constituent parts and reassembles them into a desired pattern based on the essence of the situation and the desired outcome. Strategic thinking combines rational analysis based on the nature of things and non-linearly reintegrates the items into a new pattern based on their significance and their relationship to the desired outcome. Strategic thinking begins with a definition of a critical issue in the situation. By establishing what the issue is, the thought process becomes more productive in that the focus is on framing the issue to achieve the solution rather than finding remedies for symptoms, which tends to be the case with linear thinking models.

There is little question that the nineties will see more complex issues surfacing on the horizon from a broader, more organized array of stakeholders, most with a single issue focus, and many well-financed. Colleges and universities that allow stakeholders the prerogative of framing the issues of the nineties will continue in a fire fighting and damage control mode. We must become proactive to identify potentially troublesome issues earlier in their life cycle, to frame our position more intelligently, to develop well-thought-out and supported public policy arguments, and to consider internal policies and positions from an outside-in perspective.

Our fundamental view of the nature of things is the result of our experience in past successes and failures, and the experience we have had with our competition as well as with our supporters. Our view is created from an accumulation of assumptions that have been accepted over time. This view is embodied in a paradigm, which leads to the internalization of a "map" of reality—a "decision screen" through which information is filtered. Some information (that which agrees with the paradigm) is allowed through the screen; some is filtered out (generally when it disagrees with the paradigm).

A paradigm in a broader sense is the lens through which we perceive the outside world. Our paradigm explains the macroenvironment to us and helps us anticipate stakeholder and competitor behaviors.

Together these models and maps form our "intelligence," an understanding of the world or what we know about the nature of things.

Paradigms are taught by experiences within the institution, either through formal training, or by grasping "the way things are done around here." They are embedded in the language of the institution. Promotion within the administrative hierarchy requires

Traditionally, we have focused our resources on understanding the immediate environment—students, faculty, legislators, trustees, and competitors—with varying degrees of success. However, changes in the technological environment (e.g., a new invention) can affect the economic environment; changes in the social environment (e.g., the diminished numbers of teenagers) can affect the immediate environment. The cross-impacts among macroenvironments should be the focus of an effective strategic trend intelligence system.

As these macroenvironments orbit the marketplace causing unprecedented turbulence, the information we must know has grown correspondingly.

Even the most rigid paradigm is vulnerable to dislocation from rapid change and from perceptive change agents. Change agents are people not subject to the rigid model or rules of the paradigm. They approach the arena from a totally different perspective; the mesh in their decision screen is as fine as the manager who "knows the business."

These implicit critical assumptions (decision screens) do, however, facilitate the decision-making process. In many cases, they become part of the culture, the "in-knowledge" of higher education. Critical assumptions are made over time about factors outside the organization such as legislation, competition, lifestyles, resources and, most importantly, stakeholders. Unfortunately, only the information that supports these assumptions is allowed through the screen, while information that goes counter to accepted beliefs is rejected or worse, ignored.

There is a simple but true statement that applies in situations where we become vulnerable: If we don't keep the marketplace satisfied, it will turn to someone else before long. Every time a segment of an industry (and, in an international sense, whole industries) forgets that little truism, customers are lost to someone else.

Strategic outside-in thinking as a process helps management maintain effectiveness; corporations must ask the question, "How will emerging trends impact our business?" Unfortunately, in too many cases, major U.S. industries have not moved from paradigm rigidity to paradigm pliancy and have become victims of their assumptions as the velocity and number of change agents increase.

A prime example of this rigidity is the auto industry. In this country auto manufacturing was so successful that the guiding principles that had led to early success were crystallized into implicit operating assumptions for subsequent new managers. Here were some of the auto industry's critical assumptions as it entered the 1970s:

- Success comes from having the resources to adopt quickly innovations successfully introduced by others.
- Cars are primarily symbols; styling is more important than quality to buyers that are going to trade up every other year.
- The American car market is isolated from the rest of the world. Foreign competitors will not exceed 15% of the domestic market.

- Energy will always be abundant.
- Workers are expendable and do not have an impact on productivity.
- Managers should be promoted from within.
- The consumer movement does not represent the concerns of a significant portion of the American public.
- Strict centralized financial controls are the secret to good administration.
- The government is dependent on our success. Legislators are manageable.
- We are in the business of making money, not cars.

While there was nothing intrinsically invalid about these assumptions in 1970, something was happening that would cause them to be misleading: the macroenvironment was changing. After the 1973 oil embargo, Japanese automobiles invaded our shores, consumer values shifted from style to quality, the family shrank, workers' values and attitudes changed, and government relationship required cooperation and acceptance of interference. Have other U.S. industries learned anything from Detroit? The answer has to be a resounding, "No!" Consider the steels debacle and the recent banking, consumer electronics, chemicals and energy industries paradigm shifts. Unless U.S. business becomes more flexible and more sophisticated in dealing with the macroenvironment, we can anticipate other victims.

Another example of an industry about to be victimized by untested implicit critical assumptions is the U.S. housing industry. Studies have been touting the great pent-up demand for housing due to emerging consumer markets for years; reliable estimates suggest we are two million homes under market demand presently. The all-time champ and last major change agent in home building, Bill Leavitt, compares present and future demand to the years right after World War II and suggests a need for 2.5 million housing starts a year for the foreseeable future. He suggests that a large "window of opportunity" is open.

Is this an industry mesmerized by unchallenged assumptions that have lost their meaning? Should this industry perhaps challenge rather than defend the following 1983 critical assumptions?

- Homebuilding will always be labor intensive.
- Suppliers will always be dispersed.
- Mortgage rates are the cause of builders' problems.
- On-site construction is the only way to produce houses.
- The buyer has to come to the builder.
- Broad market segmentation is the most economical way to focus products.
- The needs of the home buyer have not changed in the last 35 years.

Given these assumptions, is it any wonder the industry is ripe for major change? Both

the English and the Japanese are poised to pounce on this window of opportunity in this major U.S. industry.

British home builder Barratt Development PLC astonished shoppers at a Sears store in San Diego. While wandering through lawnmowers, insurance agents, financial advisors and underwear, shoppers came across a fully furnished full-scale condominium! The price tag was below the U.S. average at well below most dwellings available in the California market.

Having already transformed the British building industry with strategies he is wielding in the California Market (direct sales, low prices and tightly defined market segments), Mr. Barratt thinks he can capture a major share of the rebounding California housing market and by late 1990s take 10% or more of the total. That would make this change agent the largest homebuilder in the U.S. He plans to expand further into other sunbelt states.

And what of the Japanese change agents? The Japanese have raised the technology of homebuilding to such a level, their impact may be felt not only in the construction of homes but in the home furnishings and appliance industry as well. Interestingly, Japanese homes are not made with rice mats and bamboo walls. Instead, they look remarkably like the Cape Cods, colonials, splits and ranch homes we have learned to enjoy. Also these homes are mass produced in a 10 block factory with virtually no labor.

Missawa Homes, Inc. produces 29,000 homes per year; the second largest producer in Japan. In Japan, where housing is a science, not just a "stick build" phenomenon, Missawa produces a western style home, customized to buyers' specifications on an automated assembly line in 40 minutes or less. Houses that are not only fashioned right, but of high quality, competitively priced, and earthquake- and typhoon-proof carry a 10 year warranty. These houses can be erected on site in as little as two hours. They are mass produced, and come with home furnishings and appliances. With the help of a computer, the customer has about 2,000 different options available.

In fall 1990, Chicago newspapers reported that perhaps as many as three of Japan's largest housing manufacturers were actively seeking locations to establish in the U.S. Many Japanese business people view the U.S. as a country where land is cheap and competition is not very sophisticated.

How long will it be before we begin to see these homes in the U.S.? Are we about to see the invasion of the home building industry the way we witnessed the invasion of the auto industry?

If you cling to the assumptions listed above, as leaders in the U.S. housing industry may, it cannot happen. However, left unchallenged, will Barratt Development PLC be followed by Missawa Homes, Inc.?

Fast food hamburger chains may also be about to experience a revolution. Given some of the suggested critical assumptions underpinning this industry and the major institutional shifts taking place in eating habits, can major dislocation be far behind?

The following critical assumptions were made about the fast food hamburger industry in 1983:

- Labor will be cheap and abundant.
- Diets will emphasize red meat and potatoes.
- Ethnic food will remain an insignificant part of the U.S. diet.
- Protein from grain will be accepted.
- We can reach massive markets through media.
- Our customer base will continue to grow, and remain committed.
- Americans will continue to consume 3,000-3,500 calories per day.
- Needed sales growth can be obtained from present menu.
- Lifestyles will continue to require fast, hot, high bulk food.

Strategic trend analysis reveals that our eating habits have been changing gradually over the last ten years. At any given time, 70% of American adult society is on a diet, and 30% are clinically obese. Red meat, like red wine and regular beer, has given way to the so-called "lite" phenomenon. Beef consumption per capita has dropped from 127 lbs. to 96 lbs. since 1976. If current trends continue, chicken and beef will be at the same level of consumption for the first time. The explosive growth of ethnic restaurants reveals a major trend in this industry. The prime labor supply is a diminishing 16-22 year-old youth cohort, projected to drop some 25%. This decline will affect sales, operations and profitability of most traditional fast food chains. Relatedly, society is maturing. While a teenager can metabolize two Big Macs as appetizers, a 30 year-old adult can barely burn off a salad in the typical sedentary work environment. Individuals in an information society do not need the same calorie intake of those in an industrial society.

As in every industry, not every organization will be caught off guard. While some have continued to push the high bulk diet—McSteaks, McRibs, Bacon-burgers and Big Macs—others, like Jack-in-the-Box, have moved to speciality fare with sandwiches served on whole wheat bread with lettuce and alfalfa sprouts. Long John Silvers Seafood Shoppes are advertising their new "Lite Lunch," a seafood salad. Burger King has salad bars across the country and has purchased the back page of Prevention magazine to tell its two million readers. The *Wall Street Journal* had a small item recently, noting that executive dining rooms are reporting a definite trend toward lighter, smaller portions as well as toward low-cal and low sodium foods.

Seiko: Paradigm Pliancy in Action

Seiko, Japan's number one watchmaker, after analyzing the strategic trends that impact the watch business, has begun to recognize a paradigm shift. In the face of changing consumer needs and wants, a world glut of watches, a sales decrease, lack of product differentiation and shifting market dominance, Seiko is repositioning itself in the paradigm. Seiko has redefined

its mission more broadly, to enter the small precision instruments business; it is now marketing paperback book-sized TVs, computers, printers, robots and other hi-tech precision instruments. Seiko realized that its workforce and current technology flows quite nicely to the broader paradigm of small precision instruments rather than the narrower timepiece business.

Academic institutions are, in some ways, similar to commercial industries. Both are accountable, both must remain solvent, and both are in competitive marketplaces. Success, either in industry or in academia, is not guaranteed over time. Simply because critical assumptions were reasonable in the 50s, 60s, and 70s, there is no guarantee they will remain so. Myopia in the 90s could lead to major dislocations in the future. Without effective "outside-in" thinking to supplement good "inside-out" thinking, academic institutions will also be reactive and crisis oriented, just as is true in the corporate world.

Establishing a Strategic Trend Intelligence System: Linking the Environment to Decision-Making

The systematic evaluation of the macroenvironment is sometimes referred to as a strategic trend information system, a relatively new concept being employed by a few strategically managed companies both in the U.S. and abroad. Strategic trend intelligence systems are highly developed, systematic intelligence programs that focus on trends and events in the external environment and provide the knowledge and intelligence necessary to reduce areas of uncertainty. Most importantly, a strategic trend intelligence system gives organizations the lead time and anticipatory capability they need to adjust swiftly as trends stray from conventional wisdom.

Strategic trend intelligence systems depend upon a comprehensive, systematic environmental scanning program for basic information, and upon an organized issues management support system to transform environmental scanning information into intelligence that may be used for institutional action.

A number of steps are needed to establish a comprehensive environmental scanning system. These include developing a program structure and a comprehensive taxonomy with an electronic filing system, identifying and assigning information resources, securing scanners, and training scanners and abstractors. Each of these steps is described below. In addition, Appendix A contains an illustration of how one organization, The University of Georgia Center for Continuing Education, established and uses such a system.

Getting Started

A quick way of getting started is to develop an environmental scanning notebook consisting of a literature review of readily available information resources. However, the extent of the review is dependent upon the amount of time available. Appendix B contains an example of a scan that can be complied from newspaper and magazine clippings.

An on-going environmental scanning program requires that a number of people regularly review information sources—the more scanners, the greater the number of information resources. Therefore, one of the first steps in institutionalizing an environmental scanning system is to recruit volunteers to perform scanning.

One approach that has been successfully used to recruit scanners consists of offering a half-day planning workshop focusing on strategic planning models. In a planning model, environmental scanning information is essential for the institution and for its constituent parts, including program planning within individual departments or functional areas. A major part of this seminar is an exercise in the identification and evaluation of critical trends and emerging issues. This exercise enables participants to bring their individual knowledge of the external environment to a discussion, which could result in expanding the event

and trend set developed during the initial phases of the planning process. Moreover, this workshop should generate enthusiasm for establishing a system for systematically seeking indications of change in the external environment.

Developing Program Structure

The structure of the system does not have to be elaborate. The scanning committee consists of planning team members and other interested individuals. The chair is responsible for assigning information sources to each scanner and for collecting and filing scanning abstracts. Periodically, perhaps bimonthly or quarterly, the planning team meets as a scanning evaluation committee to sort, sift, and evaluate the significance of the abstracts. It is reasonable to anticipate from 100-200 abstracts per quarter, depending to some extent on the number of individuals employed in scanning. These meetings will require the team to summarize by sector (i.e., social, technological, economic, and political) all abstracts produced during the quarter. This activity will take one work week by team members. An alternative approach would be for the chair to categorize the abstracts by sector and assign each team member the responsibility for reviewing all abstracts in that sector. Regardless of which approach is used, prepare a written summary (in essence a preliminary analysis) by sector and distribute it prior to the staff meeting. Discussion and analyses at this meeting will take approximately four hours. Each meeting concludes with additions to the trend or event set and perhaps with updated information on trends and events already in the set. The chair should document the discussion and prepare a report. (See Appendix B for a discussion of how the Georgia Center for Continuing Education structured its environmental scanning process.)

Developing the Scanning Taxonomy

The trends and events identified in the initial planning activity and in the workshop for volunteer scanners may be used to develop the beginnings of a scanning taxonomy, so that every possible item resulting from scanning has a logical place to be classified. A taxonomy has two objectives: (a) to provide a comprehensive set of categories within which related materials can be filed, and (b) to provide a numbering method for every piece of information collected, as well as for the specific trends and events identified (or created) within these categories. An elementary taxonomy has six categories—demographic, social, technological, economic, political, and environmental. Abstracts and bibliographic information can be placed on an electronic data base.

Organizing the Files Electronically

Utilizing computers, electronic files facilitate review, referral and updating. Moreover, through using an electronic filing system, it is easier to develop consortium relationships with similar institutions or with institutions in the same geographic area. There are a number of electronic bibliographic data base software programs available commercially. *ProCite*, a software program developed by Personal Bibliographic Software, has standard workforms for each data entry into variable-length fields and records; authority lists to standardize names, bibliographic

titles, or key words; and a search capability using Boolean logic for quick retrieval. One reason for using this program is that it is available in both Macintosh and PC/MS DOS formats, thereby allowing data exchange via modem, over a network, or through a mainframe. In addition, Personal Bibliographic Software has developed two complementary programs, *Pro-Search* and *Bibliolinks*, thereby allowing retrieval of information from a major data base like Dialogue, which can be downloaded to disk, and transferred into an appropriate *Pro-Cite* workform (journal, book, newspaper article, etc.). It is also possible to use a standard data-base program. For example, the scanning program at the University of Minnesota uses dBase II.

Identifying Literature Sources and Data Bases

The important criterion for literature selection is diversity. Information should be obtained from newspapers, magazines, dissertations, journals, TV and radio programs and conferences.

A comprehensive list should include the following:

1. Newspapers—*The New York Times, The Wall Street Journal, The Miami Herald, The Chicago Tribune, The Los Angeles Times, The Christian Science Monitor* and *USA Today*

2. Educational Literature—*Chronicle of Higher Education* and *Education Week*

3. Social/Demographic Literature—*American Demographics, Public Opinion*

4. Technological Literature—*High Technology, Datamation, BYTE, Computer World, Discover*, and *InfoWorld*

5. Economic Literature—*Business Week, The Economist, Fortune, Forbes, Money, Inc.*, and *The Monthly Labor Review*

6. Political Literature—*New Republic, The National Review, The National Journal* and *Mother Jones*

7. General Interest Literature—*Vital Speeches of the Day, Across the Board, Naisbitt Trend Letter, Kiplinger Washington Letter, Time, Newsweek, U.S. News and World Report*, and *The Futurist*

In addition to commercial resources, a number of government agencies publish trend data, available at little or no cost. For example, GAO Reports may be obtained from the U.S. General Accounting Office, Document Handling and Information Services Facility, P. O. Box 6015, Gaithersburg, MD 20877, phone 202-275-6241. NCES reports are available from NCES, Washington, DC. Periodic Rand reports may be obtained from The Rand Corporation, Publications Department, 1700 Main Street, P.O. Box 2138, Santa Monica, CA 90406-2138.

Morrison, Renfro, and Boucher (1984) identify a number of other information resources, including those used by the ACLI Trend Analysis Program and the ERIC Clearinghouse on Higher Education.

Assigning Scanners Information Resources

Assigning scanners specific materials for regular review and analysis provides a measure of confidence that most "blips" on the radar screen will be spotted. A suggested procedure for assigning information resources is first to ascertain what materials, conferences, and so forth, are regularly read or attended by scanners. The list of materials regularly read by scanners should be compared to the list of important information resources identified in the above activity. If at all possible, scanners should be assigned material they already regularly review. It is likely that there will be material that is not regularly read; in such cases, it is recommended that scanners be asked to volunteer to read those resources. Moreover, the scanning committee chair should institute a procedure to spot check how well the information resources are being reviewed. If there are many scanners, it is advisable to build in redundancy by having two or more scanners review the same information resource.

Training Scanners

Scanners need orientation and training in scanning and in reporting information via abstracts. Scanners should keep in mind that they are scanning to anticipate social, economic, technological and legislative/regulatory changes in order to facilitate planning and policy formulation; therefore, they should seek signals that indicate departures from expected futures.
Specifically, when scanning their assigned materials, they should ask themselves if the items:

1. Represent events, trends, developments, or ideas never before encountered.
2. Contradict previous assumptions or beliefs about what seems to be happening.
3. Represent new twists to old arguments.
4. Can be linked to other abstracts previously written or seen.
5. Discuss new patents, inventions, and/or research results.
6. Have implications for the long-range program or management of the organization.
7. Contain polls or forecasts.

Training Abstractors

It would be ideal if scanners would also serve as abstractors. However, it may be necessary to employ one or two student assistants for this task. Irrespective of who does the abstracting, all scanners and institutional research staff personnel should be trained to write abstracts.

The lead sentence of an abstract should be a response to this question: "If I had only a few minutes to describe this article to a friend, what would I say? What is the most important idea or event that indicates change?" The response to these questions should be contained in a one-paragraph explanation. Whenever possible, it should include statistical data. The summary should be limited to no more than one-half page of single-spaced, typewritten copy.

Each abstract should have an implications section responding to the question, "How will the information in this article affect this organization's programs or management?" The author should include a list of those

emerging issues suggested by the article, a description of future events occurring as a result of the trend identified by the article, and/or an identification of issue stakeholders if they are not listed in the article.

Speculation about implications is a part of the scanning and abstracting process. Here the abstractor tries to determine an item's potential for affecting other facets of the social environment and/or the organization. There are no "right" answers. Note, however, that some articles may offer no implications that are immediately apparent. The scanning committee, with the benefit of related abstracts from other scanners, may be able to detect implications that a single monitor cannot.

Conducting A Scanning Committee Meeting

A scanning committee meeting should be held every two to three months to handle the approximately 70-100 abstracts that would probably come in during that period. Several approaches could be used to prepare for a scanning committee meeting. For example, at the Georgia Center for Continuing Education, the chair segregates abstracts according to subject area (i.e., all those concerning office automation go into one pile, employee compensation go into another, and those difficult to assign, into a miscellaneous pile). Each member of the committee is assigned a particular packet of abstracts to review in detail. All members read the entire selection of abstracts received, but are requested to come to the meeting with a list of only new trends and potential issues derived from those abstracts in their packet. They are expected to examine how these new trends and issues relate to or conflict with other trend areas identified previously (Morrison, Simpson and McGinty, 1987).

An alternative approach is for each member to review all scanning abstracts and come to the meeting prepared to sort them into three categories: "winners," "losers," and "middle-of-the-roaders." Irrespective of the approach used, the meeting itself may last from two to three hours, including a round robin, with each person reporting his/her subject area, and a free-for-all discussion. The end result should be a list and brief description of 15 or so trends, possible events, and emerging issues that appear important to consider in the annual planning exercise. It is at this meeting that the committee begins to transform information to intelligence that can be used in the issues management program.

Using Scanning Newsletters

A scanning newsletter can serve to bring important new trends and events to the attention of all members of the organization and, at the same time, provide recognition for the efforts of volunteer scanners. Certainly the trends and events identified between planning sessions in scanning committee meetings should be included in the newsletter. This newsletter could be a "stand alone" or could be included as an insert in one of the regularly-published organizational newsletters. The newsletter should have a logo, be "jazzy," printed on colored paper, and have special boxes labeled, "Wild Speculations." The important point is to avoid anointing speculations, but to recognize that the purpose of the newsletter is to print items that have implications for the organization. (See

Step One: Identify institutional underpinnings

The first step in the process is to identify as many of those underpinnings upon which the institution depends as possible. An underpinning can be tangible (e.g., a physical resource) or intangible (e.g., legislation, or social values that make a service/product desirable). SRI (1977) has identified a number of underpinning categories that are useful for a variety of organizations, including colleges and universities. The categories and their descriptions listed below are modified from the SRI description (pp. 3-8):

1. Needs and wants served by the organization that underpin the demand for products and services. These change. For example, the information society needs college graduates who are computer literate as well as computer systems analysts. Many academic programs across the institution have modified their curriculums in order to train graduates to work effectively in an interdependent global society based upon information technology. Relevant vulnerability questions to ask after needs and wants served have been identified are:

a. Could a need or want be served some other way by some other institution?
b. Could the need for a product or service disappear? If so, under what circumstances?

2. Resources and assets. Resources include people, capital, energy, raw material, facilities and equipment, services (e.g., postal, telephone, testing), distribution systems used by the institution, and cooperative arrangements with other institutions. Key questions in this category are:

a. What happens if a resource is no longer available?
b. Are substitutes available?
c. How much would substitutes cost?
d. How quickly could they be obtained?

It is important to include the entire range of materials and services and ask what would happen if the institution no longer had access to any one of them (i.e., what would happen if the power station has a fire, or if the Federal government regulates a lower standard overhead rate on federally sponsored research, or if the manufacturer of the computers predominate on the campus goes bankrupt?). Many institutions have consortium arrangements. What would happen if these were terminated?

3. Stability of costs relative to competition. The key question is, do costs bear a stable relationship to costs of competitive products or of services? Are some components of the institution likely to bear significant cost increases? For example, some schools and departments require more computer support and therefore are more dependent upon the cost of this technical support than are departments not as dependent upon computer support. Some fields are growing faster than others; therefore, costs for employing professors in some fields will be substantially more than in others. Sometimes costs such as labor, taxes, and utilities rise much faster than average in one particular section of the country. Competition includes not only other colleges and universities, but organizations that serve similar functions. For example, many corporations have their own profes-

sional development and training staffs; some are offering degrees.

4. Client base. Institutions with a narrow base (i.e., few programs) are vulnerable to losing clients to competitors and to the chance that clients will undertake to provide the services themselves. For example, community colleges need to be sensitive to training needs of local businesses as well as to how potential proprietary schools or area vocational-technical centers could serve these needs.

5. Technologies. Many academic programs are underpinned by a technology. They must keep up on the forefront of technology, or their graduates will find difficulty gaining employment.

6. Special abilities. Some institutions have the reputation of doing some things exceptionally well on the basis of three factors:

a. people—their skills and knowledge
b. organizational systems or procedures
c. organizational structure.

People are a resource underpinning (thereby overlapping with the first category). Some people have skills and qualities crucial to success; they are not easily replaceable. This applies to professors; it also applies to administrators, particularly those with a political sense, an ability to synthesize, to "see," or to motivate others. What would happen if these people went elsewhere?

7. Strong corporate identity symbols with which stakeholders strongly identify. What kinds of events could cause symbols to lose their value? For example, what will be the effect of growing ethnic pride or animal rights on institutional symbols (e.g., the Confederate flag, "redskins," or "bears").

8. Institutional barriers to competition. What barriers (e.g., codes, laws, licensing requirements) fence competitors out? Most state departments of education, for example, require teachers and principals to be certified by accredited schools of education. Some states are now allowing other agencies to certify teachers and principals. What happens if this practice becomes widespread in the general public education reform movement?

9. Social values. These values underpin the market for graduates and research products or the way in which institutional business is conducted. Changes in values, therefore, can harm the institution. In general, higher education has been well supported by tax and private funds. If the integrity of institutions is challenged (e.g., by concern over overhead rates), or if the value of a college degree declines, support for higher education decreases.

10. Sanctions, supports, and incentives. Sanctions, supports, and incentives are vital underpinnings if their withdrawal means that the institution must alter its operations or even close. Federal and state governments, accrediting agencies, professional associations, and labor unions sanction existing institutions as well as provide them with support. If these sanctions and supports change, institutions may be threatened. States, for example, that currently provide subsidies to independent colleges for citizens of that state enrolled in

the colleges, may withdraw the subsidies under budget crises pressures. Or a change in tax laws regarding deductions to institutions could affect development income.

11. Integrity of products and organizations. Society has implicitly trusted colleges and universities to maintain a certain quality level and to operate with integrity. If this underpinning of trust is questioned, support will be seriously affected.

12. The availability of complementary products or services. In the corporate world, if the price of components to make film went up drastically, Kodak would be in trouble. What are complementary products or services in higher education? How are they vulnerable? We need to do the same kind of audit on them.

To conduct this step of the audit, it is important that each member of the team understand the meaning of each category of underpinnings and that each member be encouraged to identify as many underpinnings as possible. This may be done by distributing a memo containing the information describing the categories above and a form like that shown in Figure 1 two weeks in advance of an off-site one-day retreat. At the retreat, begin with the nominal group technique to post individual nominations in each category. (Have a sheet of easel paper posted on a wall for each category.) Go around the group for one nomination of an underpinning until the list brought to the retreat is exhausted. (The purpose of using this technique is to ensure that the thinking of all team members is tapped, not just the thinking of the more gregarious members of the team.) Then use the brainstorming technique to add nominated underpinnings for each category. The point is to identify as many underpinnings as possible. Ask team members to focus on each category and think what would happen in the event that a descriptor of that category would be withdrawn (e.g., in the sanctions category, what would be the consequences for the institution in the event that a sanction, or an incentive, were withdrawn?).

Step Two: Identify developments (forces, conditions, events) that could damage those underpinnings (i.e., identify threats)

In a memo sent in advance of the retreat, also request team members to identify developments that affect the underpinnings they identify. Again, use the nominal group technique to list threats next to underpinnings on the posted easel sheets. Use the brainstorming technique to identify as many threats as possible for each underpinning. Search for the forces, events, or conditions that could weaken or destroy an underpinning. This could be as many as a dozen for just one underpinning. Record threats on an easel by the underpinning as they are suggested. (You may have to use additional sheets for each category of underpinning.)

This exercise requires a good deal of imagination. One way SRI suggests to conduct this exercise is to have participants imagine or assume that they are endowed with unlimited power to destroy the underpinnings. How could they do this? Have them think about past events whose occurrence was accepted without much astonishment even though previously the ideas that these events might occur seemed remote or even bizarre. It is *verboten* to

bring up the probabilities of the events or the evaluation of their effects in this step of the audit. (These discussions occur in the following steps.) Focus only threats, reaching out beyond the conventional. Conclude this step with a clearly defined list of threats, numbered sequentially.

Step Three: Evaluate the likelihood and impact of these developments

The Delphi process is used to evaluate how great the likelihood each threat is and the impact it will have if it occurs. First, using a chart like that depicted in Figure 2, have each team member independently evaluate the probability of each numbered threat (0 to 100) on the "X" axis and its impact on the institution (none, very light, light, moderate, severe, catastrophic) on the "Y" axis. Each threat should be stated in terms of an event that could occur or a condition that could exist at a certain time (e.g., Federal overhead rates for sponsored research are set at 25% within five years). An individual could estimate the probability of this threat as 60% and its impact as moderate (if the individual is at a research university), or as light (if he or she is at a comprehensive institution). Again, ensure that each threat is numbered so that team members can use that number to mark the point that represents their assessment of that particular threat on the chart. (See Figure 2.)

Pool individual evaluations by recording them on a master list posted on the wall (See Figure 3). Ascertain the degree of consensus for each threat, ensuring that the rationale behind the estimations is made explicit and discussed by the group. To do this, ask for the reasoning behind "outlying" votes. Articulating such reasoning may cause the whole team to reassess its position. For example, in Figure 3, Team Member "D" views the threat as much more severe and more likely than other team members. Perhaps "D" is in grants and contracts, or in the president's office. At any rate, he or she views greatly-lowered Federal overhead rates differently from other team members. All would benefit from a discussion of the reasoning behind "D"'s vote.

Step Four: Review the overall pattern of the threats important to the institution

After at least one round of discussion on each threat, place the consensus view on a chart like that shown in Figure 4. Note that Quadrant I consists of high impact/high probability threats, Quadrant II consists of high impact/low probability threats, Quadrant III consists of high probability/low impact threats, and Quadrant IV consists of low probability/low impact threats.

Threats in Quadrant I demand immediate attention; whereas threats in Quadrant II require further monitoring and study. Keep in mind that threats in this quadrant are the real "sleepers," and should not be dismissed readily. One thing you may note in the exercise in step three is that there usually is a much higher degree of consensus about impact than about probability of occurrence. This is because team members know more about the institution than they know about the external environment. Therefore, there is a chance that event probabilities are being rated too low. In this case, seek outside expert opinion as to the probability that the event could occur.

Don't dismiss the threat with the comment, "That could never happen!"

Threats in Quadrant III, where their impact is at best moderate, may be addressed by adding a line item to the next budget to cover their impact. For example, if the team estimated that there might be a janitor's union strike, they could recommend identifying a mediator or begin looking for an outside maintenance service that could perform temporary services. Threats in Quadrant IV consist of annoyances and nuisances such as a freak storm that shuts down a campus for a few days, but does no lasting damage. Small reserves can handle such contingencies.

Regard threats as requiring analysis by the issues management team discussed in the previous section. This team could use the strategic trend intelligence system to monitor each threat. It is important to acquire as much information about each threat as possible, particularly on those threats having high impact. From such analyses, the senior administration can formulate strategic options and decide courses of action.

Limitations of the Process

The environmental vulnerability audit is not without limitations. For example, the process does not address those problems due to the internal environment or those problems due to competitor's actions. It also does not focus on opportunities, but in the process of planning how to deal with threats, some opportunities may become apparent. Too, team members may not have sufficient knowledge or vision to evaluate threats; or a single day may provide insufficient time to identify all possible threats.

Benefits of the Process

There are a number of benefits to applying an environmental vulnerability audit. First, the process increases the expertise and judgment of organizational leaders by making them aware of conflicts in planning assumptions—both implicit and explicit. This awareness, in turn, helps institutional leaders anticipate change and surface emerging issues. Moreover, by identifying overlooked threats (environmental, not those posed by competitors), leaders have time to monitor threatening situations, to review options, and to prepare contingency plans, thereby avoiding unpleasant surprises. Too, by including leaders from across the campus, interdepartmental communication is improved.

The auditing process itself increases the efficiency of the strategic trend intelligence system because it focuses attention on factors most relevant to the institution. Some organizations try to monitor everything in the environment, which wastes both time and resources. Other organizations monitor some environmental areas, not necessarily the right ones, wasting money and exposing the institution to unnecessary risks. The environmental vulnerability audit exercise focuses on the most important environmental areas, the ones that may cause the biggest problems for the institution.

The degree of institutional acceptance of vulnerability audits will depend in large part on whether senior administrators are willing to become involved in strategic

issues over which the institution has little or no control, but where the impact on the institution could be highly negative and require fundamental changes.

Costs

The costs of conducting an audit are minimal—one day of team members' time and a facilitator. The facilitator may be on staff (e.g., the Director of Institutional Research or the Vice-President for Planning), or may be an external consultant. The facilitator should be experienced in conducting such sessions, should understand the elusive nature of some of the underpinnings, and should be familiar with a wide range of institutions over the country in order to identify examples of subtle underpinnings and threats that may be relevant to the institution. One advantage of having an outside consultant is that this person can comfortably bring up subjects that are politically sensitive within the organization, can add impartial substantive inputs to the process, and may be more knowledgeable about trends and social values than those who are unable to spend much time paying attention to these factors.

If the team identifies a number of low probability/high impact threats, there may be additional costs to search for more information on these potential events. Of course, these costs could considered a part of the strategic trend intelligence system.

Additional uses of the process

The audit process can evolve from viewing underpinnings as institutional strengths and projecting these strengths into the future. More specifically, using information in the strategic trend intelligence system, write scenarios describing possible futures and ask planning team members to examine the underpinnings from the perspectives of threats and vulnerabilities vis-a-vis these possible environments. Team members take the position of competitors who might not want to see the institution prosper. Thus institutional decision makers anticipate interventions by the competition from the perspective of the future rather than from the past. Therefore, the audit task is to categorize not only the underpinnings or strengths as they exist currently, but the vulnerabilities as they might exist vis-a-vis a perspective from the future and from an adversarial attack.

We will explore this perspective more actively in the seminar.

ACTIVITY	UNDERPINNING	THREATS
	Sanctions	
	Perceived Integrity	
	Availability of Complementary Products and Services	

Figure One: Worksheet for Identifying Institutional Underpinnings and Related Threats cont.

ACTIVITY	UNDERPINNING	THREATS
	Corporate Identify Symbols	
	Barriers to Competition	
	Social Values	

Figure One: Worksheet for Identifying Institutional Underpinnings and Related Threats cont.

ACTIVITY	UNDERPINNING	THREATS
	Customer Base	
	Technologies	
	Special Abilities	

Figure One: Worksheet for Identifying Institutional Underpinnings and Related Threats cont.

ACTIVITY	UNDERPINNING	THREATS
	Needs and Wants Served	
	Resources and Assets	
	Stability of Costs Relative to Competition	

Figure One: Worksheet for Identifying Institutional Underpinnings and Related Threats

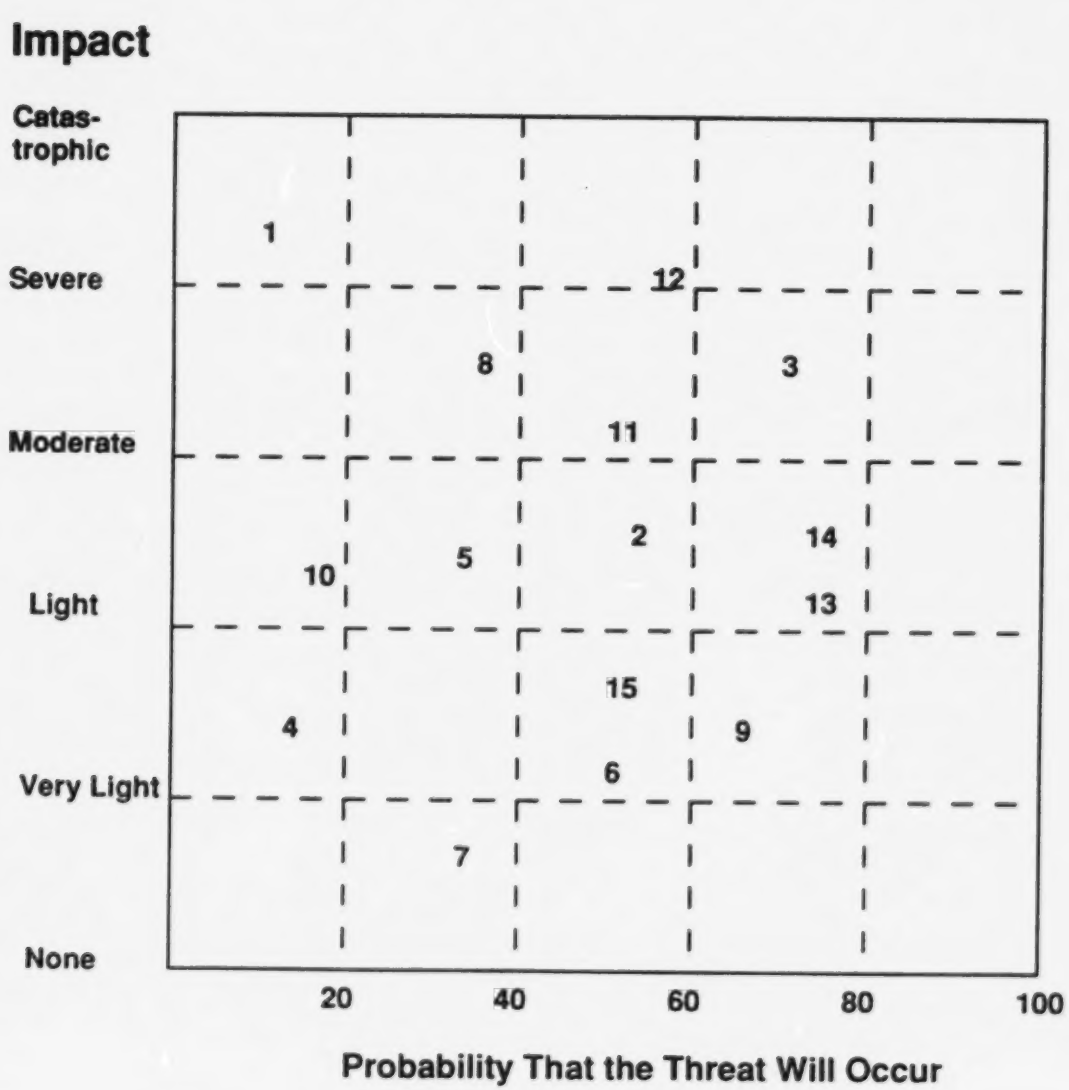
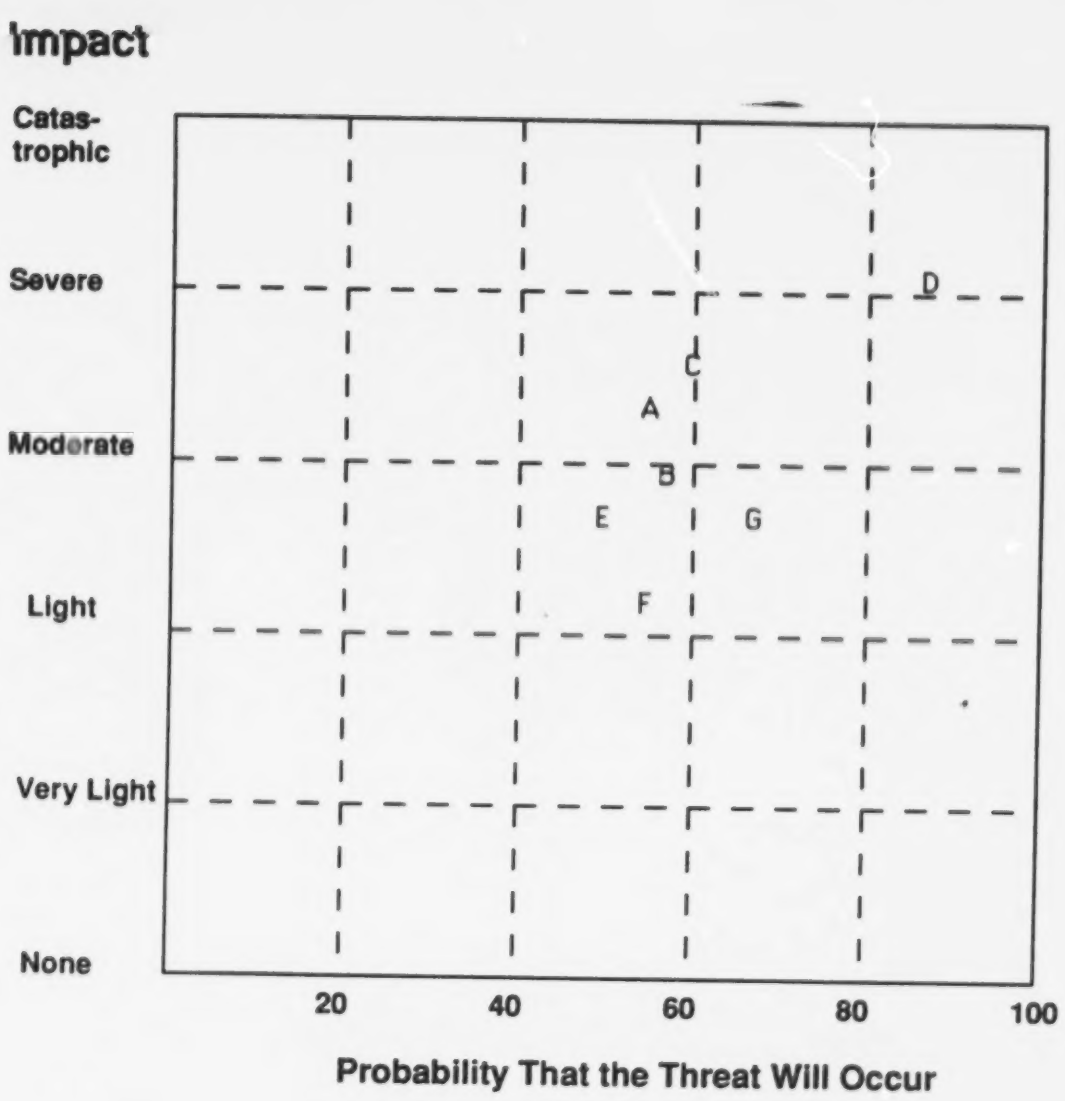


Figure 2: Probability/Impact Threat Assessment Chart
Showing One Individual's Assessment of 15 Threats



Threat: _____

Figure 3: Probability/Impact Threat Assessment Chart
Showing Team's Assessment of One Threat

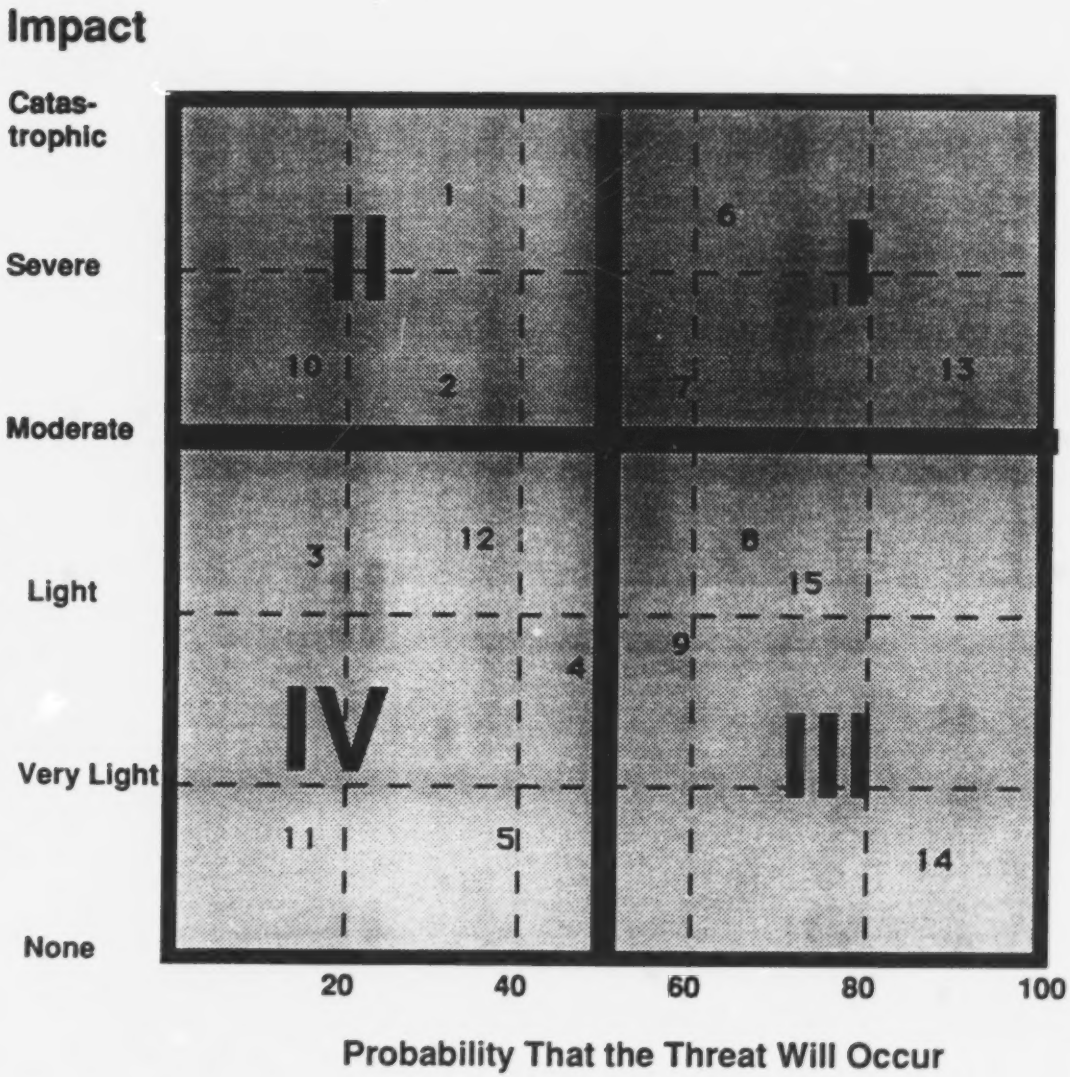


Figure 4: Consensus Probability/Impact Threat
Assessment of 15 Threats

Issues Management: The Role of a Decision Support System in Managing Uncertainty

The purpose of issues management is to allow us to anticipate and manage issues that could impact organizational performance. If we systematically prepare for emerging issues identified through the strategic trend intelligence system and environmental vulnerability audit, we can obtain valuable lead time to evaluate options thoroughly, to allocate resources effectively and efficiently, and to position the institution more creatively to act in an orderly, rational and prudent manner. A system-wide strategic issues management program allows us to operate more efficiently in a rapidly-changing and often hostile external environment, to avoid costly and disruptive adjustments, to be in compliance with regulatory and legislative initiatives, to avoid adverse publicity, and to generate positive faculty, staff, and public attitudes.

Implementation Steps

There are a number of activities that you can do to facilitate your institution's having available state-of-the-art anticipatory capabilities and strategic readiness. Many of these activities are modeled in this seminar.

1. Present an "Outside-In Thinking" Lecture. You can use the material in this handbook to present the role of outside-in thinking, which focuses on why organizations need to become more in tune with the macroenvironment and to factor trend information into today's decision making. Make this presentation thought provoking and challenging by surfacing the critical implicit core assumptions that the organization relies on to function efficiently. Make sure that you cover the components of strategic thinking. The point of your presentation is to prepare your colleagues to use information about the broad overview of forces in society and their impact on the generation and stimulation of issues that could impact the institution.

2. Present an Environmental Scanning Lecture. You can use 35 mm slides from your environmental scanning data base (or purchase ones from United Way) on the trends and driving forces shaping the way we will live, work and do business from now to the twenty-first century. This presentation should be a comprehensive preview of the social, economic, political, technological, environmental and global forces shaping the future.

3. Identify Issues Confronting the Institution. You can begin this session with a presentation on the role of issues analysis and management as a decision support system in the context of environmental uncertainty. The objective is to surface the emerging issues with which the organization is and will be confronted. Focus on the identification of gaps between the internal direction and goals of the organization and the external macroenvironment. Encourage your colleagues to remain open in order to explore issues not currently being considered, but which could result

from the confluence of external forces and internally driven intentions.

4. Prioritize Issues. In this activity focus on analyzing a myriad of emerging issues that could impact the way the organization functions in the future. Give attention to those issues to which the organization should logically and in an orderly fashion respond and over which the organization can expect to exert some influence. The key in this activity is to surface and prioritize issues against key internal and external criteria.

A Delphi questionnaire is helpful in this activity, as it can obtain maximum input from senior leaders with a minimum time commitment required. In addition, ensure that the candidate issues to be analyzed in the exercise are not only popular but strategically significant.

5. Develop a Common Understanding of the Issues. A critical next step is to lead the senior leadership in a discussion of each candidate issue to assure that the issue is clearly understood. The group should understand and agree on the issue focus, background of the issue, the various stakeholders, the current situation, driving forces (situational, policy and political), future prospects (multiple scenarios) and implications for the organization. A careful review of the results of this session will provide insight into needed additional information, where that information might be found, and who should be responsible for obtaining it.

6. Establish Ownership. At this point in the process, you need to consider the need for broader organizational representation in the consideration of the candidate issues. The cross-disciplinary nature of issues analysis and management requires well-defined roles within an organization and a realistic timetable to surface issues, determine their strategic significance, determine planning challenges, and evaluate strategic options and responses available under different scenarios. It is also important that issue ownership reside with the senior officer most closely aligned with the candidate issue. However, responsibility for follow-up, agenda, and facilitation must rest with the administrator who chairs the issues management committee for proper closure and follow through. It is extremely beneficial to have the committee sign-off on the candidate issue and have a senior administrator take ownership.

7. Establish Issue Action Teams. Many issues management programs fail because they do not involve the right people within the organization. The need for issues management grew out of the complexity of the external environment and the fact that issues did not fit into predetermined organizational boxes. Rather, issues were of a complexity level that necessarily impacted many organizational entities to one degree or another. That is why a determination must be made as to who in the institution has the most responsibility for the impact of the candidate issue and what departments or divisions should be involved in the analysis, planning, goal setting and implementation for the issue. In establishing an issue action team, responsibility for and contribution to the candidate issue should be criteria for participation in the process. Issue action teams may vary in number from three people to as many as

thirty, depending on the pervasiveness of the issue.

8. Analyze Issues for Strategic Response. There are a number of approaches to analyzing issues for strategic response. These approaches vary from complex initiatives involving scenario development, modeling and stakeholder analysis to the use of a less time-consuming and complex questionnaire with a fill-in-the-blanks format. The goal of this session will be to acquaint the administrators with the state-of-the-art analysis tools available and their relative strengths and weaknesses. The critical dimension at this point in the process is to achieve thoroughness in the analysis. The important questions that will be answered are:

- What is the focus of the candidate issue?
  (Write a clear definition of the issue.)
- What is the background of the candidate issue?
  (Write a situational assessment including milestones.)
- What are the driving forces?
  (Describe external factors driving the issues.)
- Who are the stakeholders and what are their positions?
- What are the future prospects for the candidate issue?
- What are the implications for the organization?

9. Use Scenarios. Scenarios should be written to show the interrelationship between critical environmental forces and key internal decision factors. The scenario development process should emphasize input from the issue action team members; the process necessitates the consideration of a number of alternative future scenarios. Action team input is important in the scenario development process in that it renders the scenarios more useful and meaningful. Since all of the information about the candidate issue will be historical and the decisions needed will be about the future, scenarios form a disciplined and structured judgment as to the course of possible futures.

10. Conduct Stakeholder Analysis. Stakeholder analysis shows the relationship between the organization and stakeholder groups. The important consideration in stakeholder audits is to understand: Where are key groups on the candidate issue? What is the composition of the group? Who are the leaders? How can they be reached? Strategic communications with stakeholder groups must emphasize two way flows of information.

11. Formulate Strategy. Issue resolution strategies are constructed on the issue work accomplished in the activities described above. The objective is to generate a number of alternative strategies for the president's cabinet to consider. To create strategies, people must be given the opportunity to think, in as freewheeling a fashion as possible. They must be allowed to move outside the constraints of lock-step thought.

Strategic planning emphasizes strategic thinking and makes use of non-linear thought methods. It is imperative in this process that you surface and discuss barriers that block strategic thought.

Once the methodology has been used with the action teams and alternative strategies have been surfaced, they must be tested against a clear and explicit set of criteria and the impact on each stakeholder group. The strategies should be evaluated against the following criteria and questions:

- Suitability: Is there a suitable advantage?
- Validity: Are the assumptions realistic?
- Feasibility: Does the organization have the skills, resources and commitments?
- Consistency: Is the strategy externally and internally consistent?
- Vulnerability: What are the risks and contingencies?
- Timing: When must we act? When will we benefit?
- Usability: Can the organization readily implement the strategy?

Strategy Support Requirements

There are a number of strategy support requirements. For example, with respect to resources, does the institution have or can it obtain the resources necessary to carry out the strategy? With respect to organizational structure, the question is: Can the organization's structure accommodate the new strategy? What new systems may need to be introduced to achieve the strategy?

Selecting Preferred Strategies

The issue action team must select a meaningful set of preferred strategies, first by the set of criteria described above, and then by examining resource requirements. The resulting strategies are those the issue action team and the issue owner will propose for implementation.

It must be kept in mind that strategies are by design broad courses of action the organization will pursue over an extended period of time. Typically, statements of strategy are general; they do not indicate specific milestone accomplishments or detail the activities needed for these accomplishments. These are left for the implementation phase.

Implementation

The implementation phase is one of the most critical parts of the issues analysis and management process. Implementation consists of both planning and action.

The strategy development session produces a set of strategies to implement over a specific period of time. Also, in this session there would have been discussion and identification of the resource support (people, money, facilities, information, technology) needed to implement each strategy. To develop the formal implementation process, focus should be on the following points:

- Specific changes which the organization will make to implement its strategies
- Operational goals and action steps the organization will carry out
- Individual and departmental responsibilities
- Resources the organization will use
- Timetables
- Methods of measuring progress
- Incentives and rewards for successful implementation.

Implementation is the "doing" process. While there is a tendency to expect the implementation process to unfold as a clear, articulated plan, we have found that the real world does not work this way. An action plan's success relies on internal and external factors. Therefore, facilitating implementation must deal with overcoming resistance to change and to contingency planning (see Appendix E, A Guide to Analyzing Issues for Strategic Action).

Conclusion

The objective of using proactive management techniques is to facilitate better decision making, particularly in making decisions affecting the future of our institutions of higher learning. We live in an age where almost every day seems like the dawn of a new era—the fall of the Berlin Wall, the end of the Cold War, the rapid beginning and even more rapid end of a war in the Middle East, a global AIDS epidemic that may overwhelm our health system and is threatening to decimate the population of several African countries, a crisis in American public education, and so on. The tools and techniques we have described in this handbook—the strategic trend intelligence system, environmental vulnerability audits, and issues management—are designed to help you anticipate a turbulent future, and thereby engage in more effective strategic planning.

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Appendix A

Environmental Scanning At The Georgia Center For Continuing Education: A Progress Report

Environmental Scanning at the Georgia Center for Continuing Education: A Progress Report

Edward G. Simpson, Jr., Donna L. McGinty and James L. Morrison

A technique has been developed in the corporate world to systematically gather and evaluate information from the external environment -- the environmental scanning process (Thomas, 1980). Brown and Weiner (1985) define environmental scanning as "a kind of radar to scan the world systematically and signal the new, the unexpected, the major and the minor" (p. ix). Aguilar (1967) has defined scanning as the systematic collection of external information in order to (1) lessen the randomness of information flowing into the organization and (2) provide early warnings for managers of changing external conditions. More specifically, Coates (1985) has identified the objectives of an environmental scanning system as:

- detecting scientific, technical, economic, social, and political interactions and other elements important to the organization

- defining the potential threats, opportunities, or potential changes for the organization implied by those events

- promoting a future orientation in management and staff

- alerting management and staff to trends which are converging, diverging, speeding up, slowing down or interacting (pp. 2-13, 14).

Recent literature in education planning has encouraged college and university administrators to use this process as part of their strategic planning model (Callan, 1986; Cope, 1981; Keller, 1983; Morrison, Renfro and Boucher, 1984; and Morrison, 1985, 1986-87). Several colleges and universities have begun to develop methods of formally incorporating environmental scanning information in planning for the future. Sometimes, as is the case at Cantonsville (Maryland) Community College or Georgia Southern College, this takes the form of one or two individuals in the planning or institutional research office doing a survey of the available literature (Morrison, 1986). Often this review is comprehensive and focuses on obtaining important historical data as well as forecasts in the social, technological, economic and political sectors of the external environment. Periodically, the scan is updated. Many times the scan is restricted to one or two sectors of the external environment. Jonsen (1986), for example, cites the scan of the California Postsecondary Education Commission as focusing on demographic and economic data. Other times the scan is confined to selecting key environmental issues, trends and domains for monitoring. At the University of Minnesota, the Experimental Team on Environmental Assessment (ETEA) identified between 20 and 30 issues to track (Hearn and Heydinger, 1985). There are few reports in the literature describing these systems, irrespective of the form they are taking. A search of the literature found little in the way of illustrating how an educational organization has actually developed, implemented and used the process to provide information for the strategic direction of the organization.

The Georgia Center for Continuing Education has developed a comprehensive environmental scanning project that attempts to identify signals of change in all sectors of the external environment. That is, we have selected information resources from the social, technological, economic and political aspects of the environment at the international, national, regional and state levels, and have designed a process to ensure that these resources are systematically and regularly reviewed. This may be the most comprehensive scanning system yet operating in a university setting.

The purpose of this paper is to describe the environmental scanning project at the University of Georgia Center for Continuing Education. It begins by describing the history, structure, and circumstances which led to the initiation of the project. What follows is a detailed account of how the structure was established and how the system operates to provide strategic direction in organizational and program planning. It concludes with an examination of the benefits, costs, problems and issues experienced in some 15 months of operating the system.

The Setting

The University of Georgia Center for Continuing Education is a comprehensive adult learning complex. It is organized into three divisions: instructional services, telecommunications and media services, and hotel and operating services. There are 250

full-time Center faculty and staff, as well as several hundred University professors who teach part-time in the Center's instructional program

In August 1983, a new director charged the staff to develop a mission statement for the Center, and objectives for the operating units. The expectation was that discussions focused around strengths/weaknesses, the mission and the future of the center would facilitate organizational development and renewal, including team building across the three divisions. These activities began a formal strategic planning process.

Establishing the System

External consultants were employed to discuss the role of environmental scanning in strategic planning. In their seminars it was stressed that not only could environmental scanning serve as a major source of information for the strategic planning process, but it also had a number of ancillary consequences in line with the objectives of individual and organizational renewal. For example, individuals serving as scanners evaluating what they read, saw and heard in terms of the implications for the organization, not only would become more knowledgeable about what was happening in the external environment, but also would become more future oriented.

Because the seminar participants demonstrated interest in environmental scanning, the management team commissioned an all-day workshop on environmental scanning in June 1985. This workshop was viewed as a pivotal experience for Center leadership and staff. Would the initial enthusiasm prevail? Would the benefits of environmental scanning strategic planning seem worth the extra effort of signing-up as a scanner? Would there be enough volunteers to justify the time and expense of a pilot effort in environmental scanning?

A memorandum from the director to the staff billed the workshop as a voluntary activity, one last opportunity to explore environmental scanning before being asked to commit oneself to becoming an official scanner. Forty-three persons, including the director, associate directors, assistant directors, members of the professional staff and several secretaries, participated in the workshop. The purpose of the workshop was to learn about environmental scanning and its relationship to strategic planning. Participants were urged to come to the workshop with a list of trends and emerging issues that they felt would affect the future of the Georgia Center.

As anticipated, the workshop experience succeeded in building enthusiasm to establish and participate in the system. For some, this was an opportunity for ideas generated by readings to make a potential contribution to planning for the Center's future. Also, environmental scanning promised to provide a rich pool of programming ideas tied to trends and emerging issues. For others, environmental scanning indicated a change in management style in the direction of participatory management. For the Center's management team, staff endorsement of environmental scanning meant that a full-blown strategic planning model could be used to supplement more traditional assessments. The familiar discussions of organizational strengths and weaknesses would now be flavored with considerations of external threats and opportunities.

Project Structure

The environmental scanning activity of the Georgia Center is organized as a project of the director's office. The center director serves as project director, and the assistant to the director serves as the project manager. There are two review committees: the Environmental Scanning Evaluation Committee (ESEC), consisting of volunteer scanners from each of the three divisions; and the Strategic Planning Executive Committee (SPEC). SPEC consists of the director, associate directors, assistant directors, the marketing and communications officer, a telecommunications representative, a facilities representative and the assistant to the director, who, as project manager, serves as liaison between the two committees.

Scanning Taxonomy

The major purpose of taxonomy is to be able to classify abstracts produced in environmental scanning, thereby facilitating retrieval of the abstracts. The center chose to modify the taxonomy developed by United Way of America. A widely ranging taxonomy resulted, which reflects the broad scope of adult and continuing education within the context of a comprehensive land-grant university. Taxonomy modifications reflected the center's specific needs: for example, hotel and food service management; conference/seminar development and management; the "training" phenomenon spawned by government, business and industry as well as professional associations; program development advances in areas in which the center can utilize UGA faculty expertise; and technology advances in instructional delivery systems. Eventually, the system was to be computerized; therefore, it was important to have a carefully defined retrieval system.

Assignment of Information Resources

Assigning scanners specific materials for regular review and analysis provided a measure of confidence that many "blips" on the radar screen would be spotted. A list of continuing information resources to be scanned was identified, including journals, magazines, newspapers and newsletters. The project manager matched reading preferences of scanners with resources on the list. In addition, scanners were encouraged to do "wild card" scanning (i.e., to be alert for any information form other than their assigned sources, which would have implications for the Center). Therefore, scanners periodically turned in abstracts of cartoons, radio and TV programs, sessions at professional conferences and even recent books.

Training Scanners

In August 1985, two training sessions were held for those employees who volunteered to be scanners. Scanners learned that their primary task was to identify objective descriptions of the current external environment and to identify signals of potential change. The concepts used in scanning (i.e., trend, event, and emerging issue) have been defined as follows (Morrison, 1987):

• A *trend* is a series of social, technological, economic or political characteristics that can usually be estimated and/or measured over time. It is a statement of the general direction of change, usually gradual long term change, reflecting the forces shaping the region, nation, or society in general. Trend information may be used to describe the future, identify emerging issues, or project future events. For example, in 1970, 35% of married women were in the labor force; by 1980 this percentage had risen to 49%.

• An *event* is a discrete, confirmable occurrence that makes the future different form the past. An event would be, "Federal funding for student financial aid is reduced by 50%."

• An *emerging issue* is a potential controversy that arises out of a trend or event that may require some form of response. For example, "Litigation as measured by the number of law suits per year in American society is increasing." An immediate consequence of this trend is substantially higher liability insurance for colleges and universities. An emerging consequence arises from a tendency of state legislatures to protect the public by requiring licensure of an increasing number of occupations, including periodic "updating" of credentials. This consequence implies an enhanced opportunity for the expansion of programming in continuing professional/occupational education.

Scanners were informed that they were scanning to anticipate political, economic, technological and social changes, in order to facilitate the Georgia Center's planning process and policy formulation. Their responsibilities included writing abstracts. Management recognized that scanners might be reluctant to spend the time required to write abstracts. However, requiring scanners to write abstracts themselves had the advantage of having individuals who read the articles also developing the impact assessments and implications which lay behind their identifying the articles in the first place. Furthermore, it is particularly important for senior-level people to submit impact assessments of the scanning information they send to the director's office.

Scanners were informed that the lead sentence of an abstract should be a response to these questions: "If I had only a few minutes to describe this article to a colleague, what would I say?" "What is the most important idea or event that indicates change?" Responses to these questions were followed by a one-paragraph explanation. Whenever possible, statistical data were included. The summary was limited to no more than one-half page of single-spaced, typewritten copy, since the scanning evaluation committee must deal with some 60 to 120 information items per quarter. This review is made easier when abstracts are contained on a single page. The implications section is the last section of the abstract. Here scanners were asked to respond to the question, "How will the information in this article affect the Georgia Center's programs or management?"

The System in Operation

The previous section describes the essential components of any environmental scanning project and the way in which they were developed by the Georgia Center for its purposes. At this point, it is possible to visualize parts of the whole—as a model for any organization. There is a project director to oversee the entire process. There are scanners who are scanning, reading and abstracting articles from assigned publications. There is a project manager, receiving, reading and coding abstracts. There are two committees, both responsible for analyzing the data (abstracts) in terms of implications for strategic planning.

This section describes the procedures by which these components are coordinated once each quarter to obtain organizational consensus as to the most

pressing threats and opportunities. We will illustrate this process, paying particular attention to the trends, issues and events that have surfaced thus far, and illustrating the way they were used in the Georgia Center's strategic planning process.

The Schedule

In the last three weeks of the system's quarterly operating cycle, a tightly coordinated series of events, activities, and committee meetings focus on information collected during the quarter. In the first week, all abstracts submitted since the last quarterly review cycle are reviewed by the project manager, who then synthesizes them into a coherent reference called a "Strategic Planning Worksheet." In essence, this preliminary analysis categorizes the abstracts under general statements related to trends, issues or events. These statements, referred to as "strategic thinking stimulators," are paired with thumbnail summaries of all pertinent abstracts.

The Evaluation Committee Meeting

In the second week, the project manager chairs a meeting of the Environmental Scanning Evaluation Committee (ESEC). All Georgia Center scanners who do not serve on the Strategic Planning Executive Committee (SPEC) form the pool from which ESEC members are solicited each quarter. The purpose of making membership voluntary is to encourage participation of all staff members in the Georgia Center's strategic planning process. The number of staff members participating in this committee has ranged from 14 to 25 over the first year.

The ESEC meeting begins with committee members independently reviewing a copy of the "Strategic Planning Worksheet" and identifying their six or seven priorities for discussion. Members are instructed to identify on a tally sheet seven or eight strategic thinking stimulators (approximately one-third of the number produced each quarter) that have the most salient implications for the Georgia Center. Then, in round robin fashion, members publicly cast one vote for a stimulator they consider important to the Center. The tally is recorded on a flip chart during each round. This process continues until each member of the group has exhausted his or her allocated quota of votes. Through a modified nominal group technique, the top four issues are then identified and discussed by the committee. The primary purpose of this activity is to clarify, focus or expand the issues as they relate to the Georgia Center and to make recommendations for the strategic planning process.

The Strategic Planning Executive Committee Meeting

After the ESEC's meeting, the project manager initiates SPEC's formal review of the "Strategic Planning Worksheet" and the quarter's abstracts. The project manager delivers to each SPEC member the "Strategic Planning Worksheets," a voting form and all abstracts collected that quarter. The project manager tallies SPEC's anonymous votes, generates a comparison of the top six issues surfaced by ESEC and by SPEC, and delivers the evaluation committee's written report to SPEC members.

The Strategic Planning Executive Committee meets in a half-day session. The first order of business is to formulate an update on the action agenda set by SPEC in previous meetings. Planning adjustments and a new agenda may develop in these discussions. The second order of business is to examine and discuss the final comparison of ESEC and SPEC votes as to those trends, issues and events that have the most implications for the Georgia Center's future. A crucial concern is: Are the same issues surfacing from "bottom-up" as from "top-down"? If there are conspicuous differences, what do they indicate to Center management?

The third order of business is to discuss and act upon the three top concerns of ESEC. These discussions are always broadened by the perspectives and orientations of SPEC members. ESEC recommendations may be adopted, modified or rejected (within the context of the Center's overall strategic plan), or SPEC may generate an alternate solution. Finally, SPEC discusses and acts upon those concerns uppermost in SPEC's assessment and not identified by the ESEC.

Post-Analysis Follow-Up

The three-week flurry of scanning activity, which once a quarter concentrates the efforts of 30 to 40 scanners in the arena of analysis, concludes with the SPEC meeting. However, at this stage, much remains to be done in the follow-up, the premise being that environmental scanning information should be widely disseminated throughout the organization and that everyone should be clear about results and the action agenda that may have been set. A memorandum from the Director to SPEC summarizes SPEC's quarterly deliberations and the action assignments that were made. A memorandum from the project manager to the evaluation committee is used to transmit a copy of the director's memorandum to SPEC, the evaluation committee's written report to SPEC, and the comparison of top concerns voted by SPEC and the evaluation committee.

As noted earlier, all abstracts, articles, and written reports are deposited in the Center library for use by staff members. (Staff members are encouraged to derive implications for their functional areas from the environmental scanning materials.) Within each quarterly cycle, the project manager compiles and distributes to all Georgia Center employees an environmental scanning newsletter, *Lookouts*. Most of the material for *Lookouts* is gleaned from abstracts and summarizes national, regional, state, and local issues. Included in each edition are top strategic concerns identified during the quarter by SPEC and the Evaluation Committee, as well as programming ideas identified by scanners.

The System Responds

During the first year of the project, Georgia Center scanners identified a number of issues viewed as critical for some dimension of the Center's operation. For example, both SPEC and ESEC evaluated such issues as the increasing demands for child care on college campuses, accommodation of management to values and aspirations of "baby boomers," adult illiteracy, increasing buying power of senior citizens, and the rapid expansion of VCRs in American homes.

Two examples illustrate how information identified in the environmental scanning process has been used in developing strategic direction for the Center. The first example deals with the organization's perceived need for freedom to experiment, innovate and fail, while seeking to renew the organization's creativity. The second example focuses on human resource development, both as a programming option for the Georgia Center and as a needed in-house activity for the professional development of staff.

In the first example dealing with innovation and creativity, scanners submitted a number of articles which were grouped by the project manager under a strategic thinking stimulator called "organizational and personal renewal as on-going components of strategic planning." One article addressed the issue of an organization's falling victim to its own historical success and not planning appropriately for the future (Hirsh, 1986). In another abstract, Peter Drucker was quoted as stating, "Innovation is the specific function of entrepreneurship, whether in an existing business or a public service institution..."(1986, p.67). He went on to describe innovation as a disorderly and unpredictable process that must be facilitated by successful managers who frequently prefer order and predictability. An article by Quinn (1985) stressed that successful entrepreneurs, inventor and creators tend to be "possessed" and demand flexibility and quickness, unencumbered by committee approvals and bureaucratic delays within the organization. Other abstracts discussed "idea entrepreneurs." Kanter (1986) argued that middle managers should be "reshaped" as planners, strategists and project leaders. Deets and Morano (1986) described how the Xerox Corporation encouraged high risk and innovation. Katz (1986) concluded that current management thinking maintained that administrative and managerial skills in technical, conceptual and human relations areas were not in-born, but could be developed with help and the opportunity to learn by doing. The implication of these abstracts was that the Center needed to provide freedom to experiment, in order to stimulate creativity and entrepreneurship.

The Evaluation Committee's discussion and review of the literature represented by the abstracts led them to focus on the concept of a "skunk works," as a needed management concept at the Georgia Center. This idea, pioneered by the Lockheed Corporation, had permitted groups of workers to experiment on anything to which their imaginations led them. Unencumbered by demands of accountability, the process assumed that innovation would occur in an environment free of restrictions on experimentation. The evaluation committee recommended in its report to SPEC that the Center adopt a "skunk works" approach.

There was much discussion of the recommendation in the SPEC meeting. While the majority of committee members saw the importance of innovation, creativity and the need to experiment in the organization, they wanted more accountability than was present in a "skunk works." The result of their discussions was a recommendation to the director that the center adopt a plan to provide internal grants as incentives for experimentation. These grants would be awarded on a competitive basis and would be viewed as seed money; failure would not be the "kiss of death."

In the second example, the method of dealing with an issue identified in the scanning process differed dramatically from the first. Both committees discussed human resource development (HRD) in an effort to define it and use it at the Center for program and organizational renewal. The evaluation committee focused on a number of abstracts grouped under the strategic planning stimulator question, "Is HRD rather than traditional continuing education the wave of the future?" It concluded that this question had important implications for the future of the Center. Scanners cited the "National Report on Human Resources" (American Society for Training and Devel-

opment, 1986), which indicated that Congress apparently favored an integrated approach to HRD. Congressional consultation with the American Society for Training and Development had led to a recommendation for building lifelong learning systems. The goal was to create workplace productivity and more dollar incentives for employers. Targeted audiences and issues were viewed by some scanners as critical for a university-based continuing education center. The Evaluation Committee, over a period of several quarters, continued to define HRD issues facing the Georgia Center. SPEC members, however, considered HRD to be an umbrella term that includes continuing education plus a number of functions once relegated to a "personnel officer," such as the development of career tracks, preretirement planning, benefits and professional and personal counseling. Consequently, they did not choose to pursue the matter further.

The articles identified in the environmental scanning process, their evaluation by ESEC, and the discussions of the issue at the SPEC quarterly meeting, however, did influence the director to the extent that he became convinced of the importance of HRD as a programming thrust. He felt that not only should HRD-focused training efforts be designed by the Center programming staff, but that HRD contained important elements for the personal and professional health of the Center's employees. Subsequently, after further discussions with senior staffers, he initiated a reallocation of personnel resources to begin a new program effort in the human resources development area. Thus, the scanning process generated a topic of considerable interest to one element of the organization, but an interest which could not be sustained initially for senior management. The exception was the director who chose to act because of the persuasive arguments from colleagues on the Evaluation Committee.

Costs of Operating the System

The costs of operating an environmental scanning program may be discussed in terms of personnel time, scanning resources, printing and copying expenss and computer support. While these costs may vary widely, depending upon the design of an environmental scanning project, extrapolations from the Georgia Center experience should prove helpful.

The greatest expense incurred is in staff time. The assistant to the director spends approximately half-time as project manager. The time spent on environmental scanning by other individuals is more difficult to measure. Most scanners assume responsibility for two publications; a few hardy souls also scan one of several daily newspapers on the resource list. Time spent in abstracting is difficult to assess. For instance, a simple news item with a clear-cut implication for the Georgia Center can be abstracted in thirty minutes. At the other extreme, a lengthy article yielding several interlocking implications might require an hour or more to prepare. Scanners who elect to participate in quarterly abstract-assessment meetings must block their calendars for a half-day. SPEC members spend additional time assessing and voting on abstracts prior to their quarterly meeting. Finally, although scanning and abstracting are regarded as important activities for the Center and for individual professional development, they never take precedence over operational job assignments. Consequently, many scanners elect to scan and abstract after hours.

Costs related to environmental scanning of continuing resources (magazines, journals, newsletters and newspapers) and copying have been minimal, in that the Georgia Center is one of several campus satellites of the University of Georgia's main library. Costs for subscriptions could be substantial for any organization without these facilities. Because the Center has printing and copying support available in-house, such costs have been relatively low. Expenses would be greater if the organization had to secure these services externally.

Ultimately, the success of the project depends upon computerization of scanning data. Consequently, there will be expenses for hardware, software and staff time for data input and retrieval.

Evaluation

In January 1987, the 43 initial participants in the environmental scanning project were sent questionnaires asking them to evaluate (1) their participation in various aspects of the project, (2) the ability of their colleagues to analyze trends, issues, and events, (3) the benefits of the project, and (4) their recommendations for improving the project.

Thirty-two participants responded (74%). Nine respondents reported submitting from four-10 abstracts, and six respondents reported submitting over 11 abstracts during this period. Eight respondents submitted between one to three abstracts. Nine did not submit any abstracts during the first year of the project. Many respondents wrote that the lack of time was the primary deterrent in their participation.

With respect to participation in quarterly ESEC meetings, nine respondents attended all of the four meetings held in the first year of the project, eight

attended at least one of the meetings, and six did not participate at all. (Again, these respondents blamed lack of time or scheduling conflict for interfering with participation.) Of those who participated in the meetings of either SPEC or ESEC, most thought that quarterly meetings were appropriate, and almost every respondent thought that the procedures used in conducting these meetings were very helpful.

When asked to evaluate the skill of the group in which they participated (ESEC or SPEC) with respect to analyzing trends, issue, and events, the vast majority of respondents (74%) judged this skill to be only average. Lack of experience was given as the primary reason for this evaluation; there was a perceived need for more training in selected future research methods.

Respondents were asked to evaluate the "feedback" loop used in the project (i.e., ESEC forwards its concerns and recommendations to SPEC, and SPEC sends a summary of its discussion back to ESEC). All SPEC members and 62% of ESEC respondents saw the feedback loop as a beneficial process. Those who did not check "beneficial" were asked to comment. One respondent thought that there was "mostly lip service to analyses and conclusions." Several others recommended a joint meeting of the two committees after both had analyzed that quarter's abstracts and strategic planning worksheets.

Respondents were then asked to rank order five specific "benefits" of the project and to identify others not specified on the questionnaire. The rank order of benefits was as follows: (1) provides assistance in linking the Center's future to external threats and opportunities; (2) provides useful programming suggestions; (3) fosters cross-divisional communication and understanding; (4) enhances staff development; and (5) results in the newsletter, *Lookouts*. Contributed "benefits" centered on such things as assisting management to keep informed of new developments, identifying marketing opportunities, providing for wide participation in planning the center's future, enhancing strategic planning, enhancing the Center's reputation as a leader in continuing education, and facilitating personal development.

Respondents were then requested to make an overall evaluation of the project. Out of 30 participants who responded to this question, 16 (53%) noted that the project was "well worth the time and effort," 13 (43%) noted that it was "probably worth the time and effort," and one person said that it was "not worth the time and effort." Seventy percent of the SPEC members voted that the project was "well worth the time and effort," 30 percent voted that it was "probably worth the time and effort."

Finally, respondents were requested to make specific suggestions for improving the system. Several respondents commented that the information sources currently used should be reevaluated and new sources identified, particularly non-print sources such as conferences, radio, and TV. Others reported a problem in finding time to participate in scanning, writing abstracts and evaluating abstracts. One person suggested that "ghost-writers" be employed to write abstracts of articles identified by scanners; another suggested that "lead scanners" be identified (and rewarded) to write the majority of abstracts with assistance from everyone identifying articles to be abstracted. One respondent said, "Involvement in the scanning process should be an integral part of each employee's job, not an add-on volunteer effort."

Several comments indicated tension between members of SPEC, the formal leaders of the Center, and other staff members. For example, an SPEC member said, "I believe that SPEC has demonstrated an unwillingness to consider suggestions or criticisms from "THEM" as attempts to be constructive. Unless SPEC discovers some way by which it can develop objective views of information coming from the outside...and treat that information with respect, I fear the effort is doomed." Another respondent recommended inviting those who volunteered to participate in evaluation committee meetings to meet with SPEC, a recommendation that appeared designed to facilitate communication with the organization.

Discussion

There are a number of ancillary benefits which accrue to a continuing education organization that establishes an environmental scanning system. Any group of professionals in today's world faces information overload. While the environmental scanning project certainly does not expose participants to all the literature in their domain, it does offer a systematic, formal approach to important literature related to the individual's particular specialization. Although this exposure is uneven in nature, it is a substantial and serious effort to deal with the issues produced by the process, both individually and as members of a decision-making body. The analytical skills required by each scanner to summarize articles, assess them within the context of the organization, and promulgate implications for the organization, both from programming and organizational perspectives, sharpen professional reading skills and analytical abilities, and expand personal knowledge. As Hearn and Heydinger (1985) note, "...by turning around ideas and challenging various perspectives on the

world, the...dialogues reinforce a long lost and much valued ingredient [of] the...university" (p. 437). The dialogue continues to employee satisfaction and growth, and thus to organizational effectiveness.

It should be noted that not all management decisions can be based upon the scanning process. In reality, information from the environmental scanning project forms only one part of numerous data sources fed into the decision-making process. As Jonsen (1986) argues, an understanding of the environment and its opportunities or threats should not dictate an organization's course of action. An environmental scanning system per se provides no "quick fix" or gimmick for management. Indeed, it requires an intensive amount of work by a few individuals and some work by many. It is frustrating and demands the commitment of an invaluable resource—time.

The environmental scanning project has had an impact upon the Georgia Center from several perspectives. First, it has provided the Center with a systematic review or "tickler file" to reorganize priorities and issues that must be dealt with over an extended period of time. Second, it has provided a procedure by which professionals at various administrative levels within the organization and with differing program responsibilities may make suggestions to senior administrators and even debate the issues with them.

After over a year of experience with the project, it is difficult to say if we have identified an emerging issue that has great threat or opportunity for the Center. Nevertheless, the scanning system has already forced management to deal systematically and cyclically with issues raised by subordinates as well as peers. The issues that have been raised have spawned rich, thought-provoking discussions that likely would not have taken place without the process. Moreover, it has been stimulating to develop a new approach to planning, even though the methodology still is developing.

The Georgia Center is fortunate to have the resources to support a comprehensive environmental scanning program. This does not mean that scaled-down versions could not be effective in their own right. For instance, a small staff of continuing educators might agree to "specialize" in the broad taxonomy Categories—political, economic, technological and social. Resources to scan and abstract might include the *Chronicle of Higher Education*, adult and continuing education journals and newsletters, and key publications that summarize trends and issues, for example, John Naisbitt's *Trend Letter* and *Future Survey*. Bimonthly or quarterly meetings to assess scanning input for organizational implications would achieve the goal of adding a systematic view of the external environment to the planning process. As Keller (1983) says, "We must act, doing the best we can with what we have. Herodotus and Thucydides wrote the first histories without a tidy method. Environmental scanning too should proceed regardless, adjusting regularly to new conditions" (p. 158).

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Appendix B

Environmental Scanning Notebook

ENVIRONMENTAL SCANNING NOTEBOOK

Some Possible Trends That May Impact Education

The purpose of this notebook is to stimulate your thinking about the future. The information included in the notebook will assist you in identifying possible trends and events that may impact the future direction of the organization.

The articles, charts, graphs and lists are only meant to suggest possible trends and events. Each ED QUEST team member is encouraged to identify other trends and events that represent important changes in the organization's environment.

NOTE: only a small sample of possible items are included in this example. Much of the material gathered and assembled for this notebook will be obtained from copywrited materials. For this reason, the authors could not include as wide and extensive a sample as would be contained in a complete notebook that would be used by a specific planning team. With an established environmental scanning process ongoing in an organization it is not difficult to acquire a wealth of material for the notebook.

SOCIAL

DEMOGRAPHIC ISSUES FOR THE 1990s

The following emerging workplace and family issues will be watched closely by demographers over the next decade and beyond:

- Young workers will become scarce, and shortages of entry-level workers will become more widespread. Employers will have to pay higher entry-level wages to attract skilled workers and devote more effort to train and develop the less-skilled to be job-ready.
- Shortages of qualified workers may coexist with a surplus of unqualified job seekers, especially among minorities who have not fared well educationally. Poverty among children curtails educational attainment. There is growing awareness that when today's first-graders reach adulthood they will compete within a global labor market and will need intellectual skills and levels of education and literacy never demanded of their predecessors. Mounting concerns with economic competitiveness will therefore intensify the national focus on childhood poverty and its effect on future work-force quality.
- Employment options will greatly expand for older persons who want to work. The trend toward utilizing more-experienced retired workers in traditionally entry-level jobs will increase and may ease the burden on employers to provide remedial education in their training programs.
- The schedules of American workers will grow more diverse as alternatives to the standard 40-hour, five-day workweek emerge. Parents with preschoolers, semiretired workers, and others will establish themselves within various labor markets according to work schedules they are able to accommodate in their personal lives.
- Employers will gradually offer a broader array of policies promoting a "family friendly" workplace: child care, elder care, emergency "sick child" programs, etc.
- "Two-generation geriatric" families will increase. The rise in life expectancy of the elderly means that more of the "young elderly" (persons in their 60s and early 70s) will themselves have surviving parents at extreme elderly ages. Two-generation geriatric families may have both parents and children who require care.
- "Binational" families will increase. Undocumented immigrants often form families and households that also include children who are U.S. citizens by birth. The significant presence of such binational families in certain municipalities (e.g., Los Angeles) will complicate the issue of access to social services and the definition of a "resident."
- Racial and ethnic diversification will expand the number of cities in which no one racial or ethnic group constitutes the "majority." Where such "multiple minority" cities now exist — in California and New York, for example — they foreshadow the kinds of political changes that evolve as pluralities replace majorities.
- The consequences of population aging will differ widely from place to place. Certain states, such as Arizona, receive influxes of retirees who are above average in health and prosperity; others, such as Mississippi, experience prolonged outflows of young adults, which leave behind older (often poorer) retirees who gradually "age in place."

— Peter A. Morrison

Though the results of the Cross survey seem a solid indication of the country's continued commitment to handwriting in an electronic age, it could also be viewed as just another illustration of the great American proclivity for saying one thing while doing another. A strong vote of confidence in penmanship notwithstanding, only 58 percent of respondents with children say they encourage their youngsters to practice their handwriting, and only 57 percent encourage the kids to handwrite letters or notes to friends and relatives. •

DEMOGRAPHIC FORECASTS

by Thomas Exter

SLIDING COLLEGE ENROLLMENT

College administrators discovered marketing when they realized demographics was their destiny. They saw the coming decline in traditional college-aged students and started to redesign their programs to attract students of all ages. Public colleges and universities, which account for 77 percent of all undergraduate enrollments, watched their enrollments peak in 1983 at 6.3 million—19 years after the end of the baby boom in 1964. By 1987, enrollments had declined 3 percent, to 6.1 million. Since the number of high school graduates fell by 6.5 percent during that time, college administrators must be doing something right.

Still, the demographic pressure is relentless. Projections of undergraduate enrollment in public colleges and universities show an additional 3.2 percent drop from 1987 to 1995, with enrollments falling below 5.9 million. Four-year institutions should lose 3.1 percent of their estimated 1987 enrollments, while two-year institutions are projected to lose 3.4 percent. About six in ten undergraduates in public institutions attend four-year schools.

Nineteen years after the end of the "baby bust"—a 12-year period of declining births ending in 1976—college enrollments should begin to recover some lost ground. Enrollments in 1996 and 1997 are expected to show slight increases from prior years.

Public institutions by necessity rely on projections of state and local populations for enrollment planning. The projections presented here illustrate probable national trends that point to some relief from demographic pressure late in the 1990s. If the new college marketing programs remain effective through this lean period, administrators can turn their attention to replacing college professors, who will begin to retire in droves, by the late 1990s.

Behind the Numbers These projections come from the National Center for Education Statistics of the U.S. Department of Education. They are derived by applying enrollment rates by age, sex, and grade to the Census Bureau's middle-series population projections. For more information, see "Projections of Educational Statistics to 1997-98," or contact Debra E. Gerald, National Center for Education Statistics, 555 New Jersey Avenue NW, Washington, DC 20208.

RECOVERY AHEAD

(public undergraduate enrollment, 1987–1997;* in thousands)

year	total enrollment	4-year schools	2-year schools
1987	6.069	3.555	2.514
1988	6.140	3.637	2.503
1989	6.162	3.643	2.519
1990	6.158	3.638	2.520
1991	6.102	3.607	2.495
1992	6.023	3.557	2.466
1993	5.949	3.503	2.446
1994	5.897	3.463	2.434
1995	5.875	3.446	2.429
1996	5.885	3.448	2.437
1997	5.917	3.470	2.447

* Full-time equivalent enrollment in public colleges and universities.

COUNTY FORECASTS TO 2010

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23 MILLION MORE AMERICANS

(population by age, in thousands; percent distribution and percent change, 1980–90)

	1990 population	1990 distribution	1980 population	1980 distribution	percent change
Total	249,870	100.0%	226,546	100.0%	10.3%
Under 5	18,409	7.4	16,348	7.2	12.6
5 to 9	18,333	7.3	16,700	7.4	9.8
10 to 14	17,194	6.9	18,242	8.1	-5.7
15 to 19	17,521	7.0	21,168	9.3	-17.2
20 to 24	18,746	7.5	21,318	9.4	-12.1
25 to 29	21,592	8.6	19,521	8.6	10.6
30 to 34	22,359	8.9	17,561	7.8	27.3
35 to 39	20,080	8.0	13,966	6.2	43.8
40 to 44	17,481	7.0	11,669	5.2	49.8
45 to 49	13,838	5.5	11,090	4.9	24.8
50 to 54	11,496	4.6	11,710	5.2	-1.8
55 to 59	10,644	4.3	11,615	5.1	-8.4
60 to 64	10,765	4.3	10,088	4.5	6.7
65 to 69	10,223	4.1	8,783	3.9	16.4
70 to 74	8,089	3.2	6,799	3.0	19.0
75 to 79	6,079	2.4	4,794	2.1	26.8
80 to 84	3,802	1.5	2,935	1.3	29.5
85 to 89	2,048	0.8	1,520	0.7	34.7
90 to 94	864	0.3	557	0.2	55.2
95 to 99	257	0.1	131	0.1	96.0
100 or older	57	*	32	*	76.6

* less than 0.1%

THE 1990 CENSUS WILL SHOW...

...that the population of the U.S. has reached 250 million. This gain of 23 million is a 10 percent increase over 1980. The median age of the population rose from 30 in 1980 to 33 today. But though the population as a whole is aging, some older age groups have declined since 1980, while some younger age groups have grown.

The number of people aged 50 to 59 dropped as the small generation born during the 1930s entered this age group. And the number of people aged 10 to 24 fell because of the low birthrates of the late 1960s and early 1970s. But the baby-boom generation is now in its childbearing years, and the number of children under age 10 is growing.

The oldest baby boomers turned 40 in 1986, ushering that massive generation into midlife. During the past ten years, the number of people aged 40 to 44 grew by nearly 50 percent. But the 35-to-39 age group saw the largest absolute increase. During the 1980s, 11 million people entered their 30s and are now poised to turn 40.

The fastest-growing age groups are the oldest ones. The population aged 95 to 99 has nearly doubled since 1980. And centenarians grew 77 percent. The 1990 census will show that 57,000 Americans have reached that milestone. •

FAST-TRACK STATES

Population and change in population, by region, division, and state, in thousands; and percent change, 1980–90

	1990 population	1980 population	1980–90 change	1980–90 percent change
United States	**249.879**	**226.548**	**23.324**	**10.3%**
NORTHEAST	**50.911**	**49.135**	**1.776**	**3.6%**
New England	**13.134**	**12.348**	**786**	**6.4%**
Maine	1.213	1.125	88	7.8
New Hampshire	1.133	921	212	23.0
Vermont	566	511	55	10.7
Massachusetts	5.942	5.737	205	3.6
Rhode Island	1.002	947	55	5.8
Connecticut	3.280	3.108	172	5.5
Middle Atlantic	**37.777**	**36.787**	**990**	**2.7%**
New York	17.946	17.558	388	2.2
New Jersey	7.900	7.365	535	7.3
Pennsylvania	11.931	11.864	67	0.6
MIDWEST	**59.939**	**58.866**	**1.073**	**1.8%**
East North Central	**42.112**	**41.682**	**430**	**1.0%**
Ohio	10.828	10.798	30	0.3
Indiana	5.556	5.490	66	1.2
Illinois	11.650	11.427	223	2.0
Michigan	9.279	9.262	17	0.2
Wisconsin	4.799	4.706	93	2.0
West North Central	**17.827**	**17.183**	**644**	**3.7%**
Minnesota	4.333	4.076	257	6.3
Iowa	2.814	2.914	-101	-3.4
Missouri	5.184	4.917	267	5.4
North Dakota	675	653	22	3.3
South Dakota	712	691	21	3.1
Nebraska	1.603	1.570	33	2.1
Kansas	2.507	2.364	143	6.1
SOUTH	**87.012**	**75.372**	**11.640**	**15.4%**
South Atlantic	**43.578**	**36.959**	**6.619**	**17.9%**
Delaware	658	594	64	10.8
Maryland	4.685	4.217	468	11.1
District of Columbia	622	638	-16	-2.4
Virginia	6.106	5.347	759	14.2
West Virginia	1.901	1.950	-49	-2.5
North Carolina	6.669	5.882	787	13.4
South Carolina	3.548	3.122	426	13.6
Georgia	6.557	5.463	1.094	20.0
Florida	12.832	9.746	3.086	31.7
East South Central	**15.536**	**14.646**	**890**	**6.1%**
Kentucky	3.768	3.661	107	2.9
Tennessee	4.954	4.591	363	7.9
Alabama	4.155	3.894	261	6.7
Mississippi	2.679	2.521	158	6.3
West South Central	**27.878**	**23.747**	**4.132**	**17.4%**
Arkansas	2.428	2.286	142	6.2
Louisiana	4.570	4.206	364	8.7
Oklahoma	3.316	3.025	291	9.6
Texas	17.565	14.229	3.336	23.4
WEST	**52.008**	**43.172**	**8.836**	**20.5%**
Mountain	**13.881**	**11.373**	**2.508**	**22.0%**
Montana	818	787	31	3.9
Idaho	1.019	944	75	8
Wyoming	515	470	45	9.5
Colorado	3.436	2.890	546	18.9
New Mexico	1.587	1.303	284	21.8
Arizona	3.656	2.718	938	34.5
Utah	1.775	1.461	314	21.5
Nevada	1.075	800	275	34.4
Pacific	**38.128**	**31.800**	**6.328**	**19.9%**
Washington	4.641	4.132	509	12.3
Oregon	2.758	2.633	125	4.8
California	29.030	23.668	5.362	22.7
Alaska	570	402	168	41.9
Hawaii	1.128	965	163	16.9

THE 1990 CENSUS WILL SHOW...

...that the Northeast has become the least populous region of the country.

The population of the fast-growing West squeaked past that of the slow-growing Northeast during the 1980s. Overall, states in the South and the West captured nearly 90 percent of the nation's ten-year population gain. While the Midwest was the slowest-growing region, it remains the second most populous area in the nation. The South, with 87 million people in 1990, remains solidly in first place.

California gained more people than any other state — over 5 million since 1980. Th

BEST COPY AVAILABLE

1990 census will show that more than 29 million people live in the most populous state. Texas and Florida gained more than 3 million residents each during the 1980s, while Georgia gained over 1 million. Alaska grew the fastest during the 1980s, up by 42 percent. Arizona and Nevada follow, with gains of more than 34 percent.

Some states in the Northeast are making comebacks. The 1990 census will rank New Jersey and New York among the top 15 population gainers.

Alaska, Arizona, Nevada, and Florida each grew by more than 30 percent in the past ten years, three times as fast as the nation as a whole. Texas, New Hampshire, California, New Mexico, Utah, and Georgia grew at more than double the national rate.

The population losers of the 1980s were West Virginia and Iowa, along with the District of Columbia. •

ETHNIC SURGE

Population and change in population, by race and Hispanic origin, in millions; percent distribution and percent change, 1980–90

	1990		1980		1980–90	
	population	percent distribution	population	percent distribution	change	percent change
Total population	249.9	100%	226.5	100%	23.4	10%
White	210.3	84	194.7	86	15.6	8
Black	31.0	12	26.7	12	4.3	16
Asian or other races	8.6	3	5.2	2	3.4	65
Hispanic*	21.0	8	14.6	6	6.4	44

* Hispanics may be of any race

THE 1990 CENSUS WILL SHOW...

...increasing ethnic and racial diversity. During the 1980s, 500,000 legal migrants a year accounted for one-fifth of our population growth. And about 200,000 illegals also joined our population each year. Mexicans, Filipinos, Chinese, Koreans, and Vietnamese are the most common new arrivals. These immigrants are the driving force behind the changing racial and ethnic composition of the U.S.

The 1990 census will count 21 million Hispanics, a 44 percent increase since 1980. Hispanics now account for over 8 percent of Americans, up from only 6 percent ten years ago. And if the 1990 census undercounts Hispanics at the same rate as the 1980 census, the figures will fall short of the true total by about 1 million.

The number of people of "other" races (mostly Asians, as well as Pacific Islanders, American Indians, Eskimos, and Aleuts) grew the fastest during the 1980s, up by 65 percent. This growth is primarily the result of Asian immigration. Now nearing 9 million, "other" races gained as a share of the U.S. population, rising from 2 to 3 percent.

With a 16 percent increase, blacks held on to their 12 percent share of the total population. Though whites gained the greatest number of people (16 million), their 8 percent increase was not enough to maintain their share of the total population, which dropped from 86 to 84 percent. •

BIG-CITY BOOM

Population of the 25 most populous metropolitan statistical areas and change, in thousands; percent change, 1980–90

1990 rank	1980 rank	Metropolitan area	1990 population	1980 population	1980–90 change	1980–90 percent change
1	(2)	Los Angeles-Long Beach, CA	8.771	7.477	1.294	17.3%
2	(1)	New York, NY	8.625	8.275	350	4.2
3	(3)	Chicago, IL	6.308	6.060	247	4.1
4	(4)	Philadelphia, PA-NJ	4.973	4.717	256	5.4
5	(5)	Detroit, MI	4.409	4.488	-79	-1.8
6	(7)	Washington, DC-MD-VA	3.710	3.251	459	14.1
7	(8)	Houston, TX	3.509	2.735	774	28.3
8	(6)	Boston, MA	2.837	2.806	31	1.1
9	(13)	Atlanta, GA	2.744	2.138	605	28.3
10	(9)	Nassau-Suffolk, NY	2.736	2.606	130	5.0
11	(15)	Dallas, TX	2.615	1.957	658	33.6
12	(10)	St. Louis, MO-IL	2.511	2.377	134	5.6
13	(14)	Minneapolis-St. Paul, MN-WI	2.460	2.137	323	15.1
14	(19)	San Diego, CA	2.375	1.862	513	27.6
15	(12)	Baltimore, MD	2.352	2.199	153	6.9
16	(16)	Anaheim-Santa Ana, CA	2.294	1.933	361	18.7
17	(24)	Riverside-San Bernardino, CA	2.265	1.558	707	45.4
18	(25)	Phoenix, AZ	2.152	1.509	643	42.6
19	(22)	Tampa-St. Petersburg, FL	2.109	1.614	495	30.7
20	(11)	Pittsburgh, PA	2.085	2.219	-133	-6.0
21	(20)	Oakland, CA	2.033	1.762	272	15.4
22	(18)	Newark, NJ	1.913	1.879	34	1.8
23	(21)	Miami-Hialeah, FL	1.853	1.626	227	14.0
24	(23)	Seattle, WA	1.842	1.608	234	14.6
25	(17)	Cleveland, OH	1.832	1.899	-67	-3.5

Note: Geographic definitions for 1990 and 1980 metropolitan areas as defined as of June 30, 1988

THE 1990 CENSUS WILL SHOW...

...a resurgence in metropolitan growth. Ten years ago—as the nation looked back on a decade of unprecedented nonmetropolitan growth—no one anticipated a metropolitan revival. But during the 1980s, metropolitan areas grew at nearly double the rate of nonmetropolitan areas.

While no new metros will be added to the top 25, rankings will change. The 1990 census will show Los Angeles-Long Beach replacing New York City as the most populous metropolitan area. L.A. grew by 17 percent since 1980, while New York City grew by just 4 percent.

Over the decade, Los Angeles-Long Beach gained more people than any other metropolitan area—1.3 million. Despite Houston's economic woes, that area gained fully 774,000 people. Riverside-San Bernardino, which borders the L.A. metropolitan area, comes in third with a gain of 707,000 people.

Among the 25 largest metropolitan areas, Riverside-San Bernardino has been the fastest growing—up 45 percent since 1980. But Phoenix follows closely with a 43 percent gain. Dallas, Tampa-St. Petersburg, Houston, Atlanta, and San Diego all grew by more than 25 percent in the 1980s. The only losers among the top 25 metros were Pittsburgh, Detroit, and Cleveland. •

LONE LIFESTYLE

(households and change in households, in thousands; percent distribution and percent change by household type, 1980–90)

	1990		1980		1980–90	
	households	percent distribution	households	percent distribution	change	percent change
All households	93,920	100.0%	80,467	100.0%	13,453	16.7%
Family households	66,842	70.8%	59,190	73.6%	7,352	12.4%
Married couples	52,837	56.3	48,990	60.9	3,847	7.9
Without children <18	28,315	30.1	24,210	30.1	4,105	17.0
With children <18	24,522	26.1	24,780	30.8	-258	-1.0
Other family, female head	11,130	11.9	8,205	10.2	2,925	35.6
Other family, male head	2,575	2.7	1,995	2.5	580	29.1
Nonfamily households	27,378	29.2%	21,277	26.4%	6,101	28.7%
Living alone	22,879	24.4	18,202	22.6	4,677	25.7
Men	9,119	9.7	7,075	8.8	2,044	28.9
Women	13,759	14.7	11,127	13.8	2,632	23.7
Living with nonrelatives	4,500	4.8	3,075	3.8	1,425	46.3
Male householder	2,803	3.0	1,866	2.3	937	50.2
Female householder	1,696	1.8	1,209	1.5	487	40.3

THE 1990 CENSUS WILL SHOW...

...that the number of households grew by 17 percent during the 1980s, faster than the population as a whole. Average household size continues to shrink—to 2.6 people per household in 1990, down from 2.8 in 1980.

The census will show that one in four households is a person who lives alone. The number of single-person households grew 26 percent in the 1980s. In sharp contrast, the number of married couples with children under age 18 in the home fell 1 percent—the only household type to decline in number. The fastest-growing family type was families headed by women with no husband present, up 36 percent during the decade.

The number of householders who live alone or with unrelated people (nonfamilies) grew 29 percent in the 1980s, compared with a 12 percent gain for families. Among nonfamilies, the fastest-growing household type was people living with nonrelatives. Over the decade, this type of household increased by 46 percent, to 4.5 million. Nonfamily households headed by men grew faster than those headed by women. •

MIDLIFE MONOPOLY

(households and change in households, in thousands; percent change by age of householder, 1980–89)

	1989	1980	1980–89 change	1980–89 percent change
All households	93,920	80,390	13,530	16.8%
Under 25	4,683	6,709	-2,026	-30.2
25 to 34	21,191	18,351	2,840	15.5
35 to 44	21,059	13,948	7,111	51.0
45 to 54	14,330	12,630	1,700	13.5
55 to 64	12,349	12,617	-268	-2.1
65 and older	20,307	16,134	4,173	25.9

(median household income, change in income, and percent change by age of householder, 1979–89; in 1989 dollars)

	1989 median	1979 median	1979–89 change	1979–89 percent change
All households	$29,317	$28,554	$ 763	2.7%
Under 25	17,405	19,430	-2,026	-10.4
25 to 34	30,408	30,356	52	0.2
35 to 44	39,298	37,811	1,487	3.9
45 to 54	42,218	40,361	1,857	4.6
55 to 64	30,906	31,429	-523	-1.7
65 and older	16,335	14,374	1,961	13.6

Note: Income statistics refer to annual income in the year prior to the censuses.

THE 1990 CENSUS WILL SHOW...

...that median household income is nearly $30,000—2.7 percent greater than ten years earlier, after adjusting for inflation.* The gains in household income late in the decade more than made up for an 8 percent drop between 1980 and 1981. But these income gains have not been shared equally by all age groups.

The number of householders under age 25 fell by 30 percent during the 1980s as the baby-bust generation entered adulthood. The median household income of this age group also fell, to just $17,400 in 1989—10 percent less than in 1979, after adjusting for inflation. This median is now just 7 percent greater than that of elderly householders. Ten years earlier, it was 35 percent greater.

The number of households headed by people aged 25 to 34 grew 15 percent since the last census. The median income of this group just kept pace with inflation.

Rapid growth in the number of middle-aged householders nearing their peak earning years boosted overall median household income in the 1980s. Householders aged 35 to 44 have the second highest median income, nearly $40,000 in 1989. During the 1980s, the number of households in this segment grew by 51 percent. Householders aged 45 to 54 have the highest median income—$42,200 in 1989, nearly 5 percent greater than in 1979, after adjusting for inflation.

The number of householders aged 55 to 64 is down 2 percent since the last census. The median income of this group also fell 2 percent over the decade. The trend toward early retirement is behind this income decline.

Householders aged 65 and older enjoyed the greatest economic gains during the 1980s. Increases in Social Security and in pension participation contributed to this group's 14 percent income gain. ●

** The census asks for income in the previous year.*

BULGE IN THE MIDDLE

(civilian labor force aged 16 and older by age and sex, in thousands; participation rates, and percent change in labor force, 1988–90)

	1990		1988		1988–90
	labor force	participation rate	labor force	participation rate	percent change in labor force
Labor force, aged 16 and older	121.861	66.6%	104.450	62.5%	16.7%
MEN	67.211	75.3%	59.926	75.8%	12.2%
16 to 24	10.971	70.6	12.591	68.9	-12.9
25 to 34	19.763	93.8	16.655	93.9	18.7
35 to 44	17.090	94.3	11.609	94.8	47.2
45 to 54	11.120	90.6	9.838	90.8	13.0
55 to 64	6.467	65.2	7.256	71.9	-10.9
65 and older	1.799	14.6	1.978	20.0	-9.0
WOMEN	54.650	58.3%	44.523	50.5%	22.7%
16 to 24	10.122	63.0	10.982	58.0	-7.8
25 to 34	16.368	75.4	12.112	64.9	35.1
35 to 44	14.692	77.8	8.446	54.8	74.0
45 to 54	9.175	70.6	6.916	59.0	32.7
55 to 64	3.020	44.2	4.824	41.9	-37.4
65 and older	1.274	7.4	1.243	8.7	2.4

Note: The labor force consists of persons aged 16 and older working or looking for work. The labor force participation rate is the share of the population in an age group that is in the labor force.

THE 1990 CENSUS WILL SHOW...

...women accounting for almost 60 percent of labor force growth since 1980. Today, fully 58 percent of women and 75 percent of men aged 16 or older are in the labor force.

Overall, the nation's work force grew by 17 percent since 1980. But changing demographics combined with shifting labor force participation rates resulted in a sharp decline in the number of entry-level workers and a decrease in the most experienced workers.

There are 13 percent fewer men aged 16 to 24 in the labor force and 8 percent fewer women. In contrast, the number of workers aged 25 to 34 grew by 19 percent among men and 35 percent among women.

The aging of the baby boomers produced dramatic growth in the number of workers aged 35 to 44. Over the decade, the number of men aged 35 to 44 in the labor force rose by nearly 50 percent. As the labor force participation rate for women aged 35 to 44 leaped from 65 to 78 percent, this group experienced a 74 percent numerical increase.

The number of women aged 55 to 64 who work dropped by fully 37 percent since 1980, and the number of men in this age group who work dropped by 11 percent. Although labor force participation rates for women aged 55 to 64 rose slightly during the 1980s, men's rates fell because of early retirement. That drop, combined with a smaller population in this age group, is behind the decline in the experienced work force. •

BETTER EDUCATED

(educational attainment of noninstitutionalized adults aged 25 or older by sex and age, 1990 and 1998, in percent)

	1990			1998	
	percent high school graduates	percent college graduates	percent completing 4 or more yrs. of college*	percent high school graduates	percent completing 4 or more yrs. of college
All adults, aged 25 and older	77.3%	18.6%	20.3%	66.9%	16.4%
MEN	77.7%	21.9%	23.9%	67.7%	20.3%
25 to 34	86.5	21.3	24.5	84.8	26.5
35 to 44	87.1	28.3	30.8	77.3	24.5
45 to 54	79.1	24.6	25.5	65.8	19.8
55 to 64	68.1	18.9	20.7	56.3	14.3
65 and older	54.6	13.4	13.6	37.5	10.0
WOMEN	76.9%	15.6%	17.0%	66.2%	12.9%
25 to 34	87.8	20.5	23.6	84.1	20.4
35 to 44	86.6	20.6	22.5	76.4	14.9
45 to 54	79.2	14.9	15.4	68.7	10.5
55 to 64	70.2	10.1	11.1	57.6	8.0
65 and older	55.2	7.9	8.0	40.1	7.2

* This category will not be included in the 1990 census. These are American Demographics' estimates.

THE 1990 CENSUS WILL SHOW...

...that the leading edge of the baby boom—now aged 35 to 44—is the most educated generation ever. One in four has completed at least four years of college. Younger men, aged 25 to 34, are now less likely to have completed four years of college than were the baby boomers ten years ago. The high cost of education may be pushing young adults out of college and into the work force.

One in five Americans has completed at least four years of college, up from one in six ten years ago. But you won't be able to make this comparison using the 1990 census. That's because this census will ask for the educational degrees people have earned, rather than the number of years of school they have completed.* Because not everyone who completes four years of college gets a degree, the share who graduate from college will be lower than the share who have attended college for at least four years. The 1990 census will show that nearly 19 percent of Americans have at least a bachelor's degree.

The census will also show that the educational gap between men and women is narrowing. Among people aged 45 to 54, the share of men with college degrees is 10 percentage points higher than the share of women. But among people aged 25 to 34, the difference is less than 1 percentage point. While the share of young men with four or more years of college dropped since 1980, the share of young women with four or more years of college grew. •

* *See "The 1990 Census Questionnaire," American Demographics, April 1989, page 24.*

The Elusive Decade of Hispanics

The Miami-based Cuban American National Council, Inc., has published a significant report, The Elusive Decade of Hispanics, which highlights key issues and outcomes that shaped the Hispanic-American community during the 1980s. Following are some highlights from the report.

The Decade of Hispanics

During the 1980s the U.S. Hispanic population reached the 20 million mark. The media was quick to recognize the event as newsworthy. Hence, Hispanics were "discovered" in the 1980s and the general public was amazed that a virtually ignored group suddenly had become the nation's fastest-growing minority.

So widespread and frequent was the media coverage that the period was dubbed "the decade of the Hispanics," and it was anticipated that Hispanics would seize the opportunity to turn their numbers into equitable political empowerment and full participation in the nation's social, economic and educational life.

But Hispanics did not move as rapidly as outside observers had predicted. United by a common language and by their roots in nations that were colonized by Spain, Hispanics are divided by country of origin, the recency and nature of their entry into the United States, race, age, class, and the regions of the United States in which they live. These differences are considerable, and in the early years of the decade the groups were still developing a collective awareness of themselves as "Hispanics." It was not until the latter part of the 1980s that their leadership began to focus on a national Hispanic agenda and to seriously consider the potential benefits that could be derived from the nation's deepening interest in Hispanic issues.

The closing of the decade offers an opportunity to look back. Did "the decade of Hispanics" fulfill its promise? What was set in motion? Where did it fall short of expectations? What was achieved? What lies ahead?

What Did Hispanics Expect?

The issues pursued by Hispanics in the 1980s reflected their desire to become active players in the U.S. pluralistic society and to participate fully in the "American Dream." Although the leadership dealt with a wide range of concerns, attention was focused most strongly on employment, education, the preservation of the Hispanic heritage and cultural values, and a quest for equitable political representation.

The Numbers

In less than a decade the Hispanic percentage of the total U.S. population rose from 6.5 percent to 8.1 percent. Between 1980 and 1988 Hispanics experienced a 34 percent growth rate, compared to an 8 percent general-population growth rate. The numbers increased from 14.5 million in 1980 to 19.4 million in 1988. In fact Hispanics became the nation's second largest ethnic/racial minority, surpassed only by black Americans.

The Gains

• Political representation. The decade proved that Hispanics are actively seeking and slowly gaining political representation. In 1984 the number of Hispanic elected officials in the nation was 3,128; by 1988 that figure had increased by approximately 7 percent, to 3,360. However, those 3,360 Hispanic elected officials amounted to less than 1 percent of the nation's elected officials, far below the 8.1 percent of the total population that Hispanics constituted in that year.

By 1988—

• 230 Hispanics were mayors

• 1,425 were county and municipal officials

• 120 were state legislators

• 1,226 were education or school board officials, and

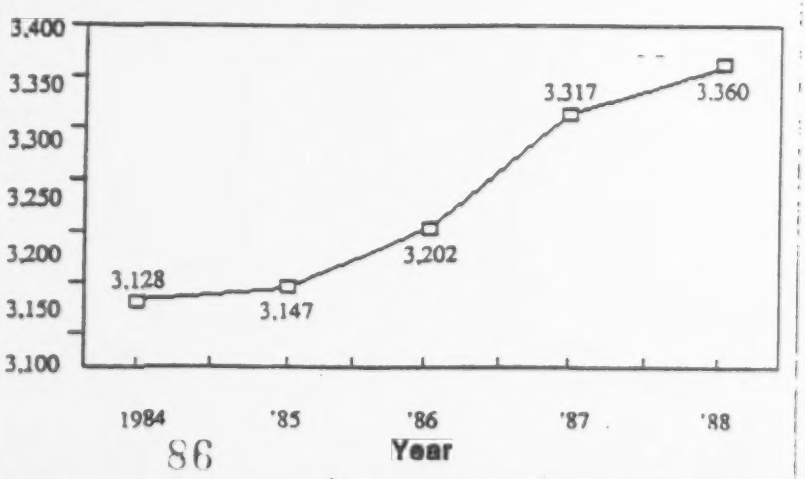
• 11 were U.S. representatives

Hispanic influence has also been reflected in the appointment of several Hispanics to high-level government positions, for example, Lauro Cavazos as U.S. Secretary of Education, and Manuel Lujan as U.S. Secretary of the Interior.

• Economic Gains. Some economic gains made by Hispanics over the decade were encouraging. In 1980, only 2.3 percent of Hispanic households qualified as affluent. By 1986 that figure had quadrupled, reaching 9.2 percent, higher than the black figure of 6.9 percent, and

Hispanic Elected Officials

Number of Hispanic Elected Officials



Source: The Cuban American National Council, Inc., *The Elusive Decade of Hispanics*

inexorable march to the new age.

However, by demanding that black consumers subscribe to white products, white values and white culture by purchasing products that define white attitudes, blacks will continue to feel the frustration of trying to assimilate into a society whose mainstream widens, shrinks or is redirected by "a word from our sponsor."

Toward An African-American Agenda: An Inward Look

Dr. Ramona Hoage Edelin
President and Chief Executive Officer
National Urban Coalition

While domestic demographic projections differ, there is no question about the facts that the number of workers available to the U.S. work force is in sharp decline. That is to say, we already know there will be a labor shortage in the next century; that the need for higher educational and technological expertise of that work force has increased dramatically at the same time that the preparation in mathematics and science of all American high school graduates has declined alarmingly, relative to other students in the global economy; that children of color have been under-prepared at an unconscionable level and to a totally unacceptable degree, particularly in the technological fields; and that, when we add women, who are also underprepared in the technical fields, to the pool of available workers, the percentage of potential workers requiring great investment in their talent and knowledge approaches 85 percent. Racism, classism, and sexism must not continue to prevent the development of a solid American work force, if economic opportunity and a stable standard of living are to remain all-important to Americans.

Despite the range of personal feelings and opinions in matters of race, there have been substantial changes in the status of African Americans over the past 50 years, due to systemic public and private responses to the need to develop America's human capital. We want to press such changes much further, to their conclusion: to the perfect and unlimited equality of the African-American, and of other people of color.

Before cultural renewal can unfold, before education can lead our group back to its ancestral mastery in learning, before the development of a self-sustaining economic infrastructure can be realized, we must want and decide to make the most of being African in America. This key decision can be a compelling creative challenge resulting in perfect equality if we properly understand our possibilities and work together toward achieving them.

Agendas that address what we need or should have from the external or larger society include impacting public policy at the state and local as well as federal levels, particularly in areas related to ending our segregation from capital, and ending discrimination in housing, employment, education, and the criminal justice system. Renewed demands for reparations and resistance with respect to Reagan Court roll-backs in affirmative action affecting employment opportunity and economic development are the clear priorities.

All the research corroborates our experience that isolation of parts of our group, such as "dropouts," "unwed teens," "learning disabled," children, or "senile" senior citizens only increase their inability to function productively in society. The middle-class wants a structured way to share talent and advantage with those less fortunate who are of their families and group, and to reverse the brain-drain that depletes our still-segregated cities. Children and young adults often do not have the benefit of an extended family, with seniors or elders who can share wisdom and practical counsel with them. Far too many women, who are not inherently unable to raise families by any means, lack the support network of male and female family and friends who are always needed to help in the raising of children as part of a social or cultural group.

How can we ensure that systemic racism will be too costly to be continued in the 1990s? When we understand what it means to be equal, to make ourselves the perfect and unlimited equals of any group, to regain control and power over our lives and destinies and those of our children—when we have chosen to redevelop ourselves and our culture, then the costs of institutionalized discrimination against us will be too high in America. A successful cultural offensive—which would unite us and coordinate and focus our leadership: create markets, businesses and jobs: reestablish mastery in learning and materially change the lives of our poor, near-poor, and middle classes so that our group substantially enhances the productivity and competitiveness of this nation—will ensure that the "old, tired baggage of racial discrimination and bigotry" must be discarded on the way from the 1980s to the new millenium.

Mean Family Income: Selected Years

(1988$)

	Median Family Income				Aggregate*
	Black	White	B/W	B/W	Gap
1988	$19,329	$33,915	57.0	$14,586	$111 Billion
1987	19,168	33,725	56.8	14,557	107 Billion
1986	19,001	33,255	57.1	14,254	104 Billion
1985	18,455	32,051	57.6	13,596	99 Billion
1982	16,670	30,161	55.3	13,491	91 Billion
1980	18,196	31,447	57.9	13,251	83 Billion
1978	19,739	33,327	59.2	13,588	80 Billion
1970	19,144	31,209	61.3	12,065	61 Billion

*Equals (Mean White Family Income - Mean Black Family Income) × Number of Black Families

Source: U.S. Department of Commerce, Bureau of the Census, *Money Income and Poverty Status in 1988*, Table 7. Calculations of aggregates and gaps done by author.

Separate but equal all over again

In Louisiana, a court battle over desegregating the state's public colleges has raised racial passions

Pioneer. Student-body President Bennett knows integration has its price

Kirt Bennett symbolizes both the success and the failure of the nation's campaign to desegregate its colleges and universities. Last month, the senior from New Orleans was elected president of the 26,000-member student body at Louisiana State University in Baton Rouge by one of the largest margins in the school's history. Bennett is one of only 1,900 black students at LSU, the state's flagship university. He selected LSU over predominantly black schools for academic reasons. But since his freshman year, when he learned that LSU's fraternities were segregated, Bennett has endured indignities small and large. "You get a juice of reality from Day One," he says.

Nearly four decades after the U.S. Supreme Court declared separate school systems for blacks and whites unconstitutional, public higher education in Louisiana—and throughout the South—remains largely segregated. Last year, a federal court in New Orleans ordered Louisiana to take sweeping steps to eliminate the "racial identifiability" of its 19 colleges and universities. Enrollment is at least 90 percent black at four of the schools, while whites make up 74 percent to 92 percent of the student bodies at 14 of the others.

The court called for Louisiana to merge the governing boards of its three separate university systems, including predominantly black Southern University, which has three campuses and 14,000 students. It also required affirmative-action admissions policies at both black and white schools, enrollment ceilings to prevent the "flight" of students to same-race schools and the merger of the LSU and Southern law schools, both located in Baton Rouge.

Unlikely opponents. The ruling, the latest turn in a case first brought by the U.S. Justice Department in 1974, has raised important legal issues that may ultimately be decided by the Supreme Court. Must states do more than abolish legal segregation in their colleges and universities? And, if so, what must they do? The Louisiana case could affect desegregation plans under way throughout the South and in border states such as Maryland. The High Court recently agreed to review an Oklahoma case involving similar issues in elementary and secondary education.

Black and white on campus

The U.S. government says that Louisiana must take steps to eliminate the "racial identifiability" of its public colleges and universities, especially on four predominantly black campuses:

University	Percentage of students enrolled who are— Black	White
Grambling State Univ.	94.6%	3.4%
Southern Univ.-Baton Rouge	91.6%	5.0%
Southern Univ.-New Orleans	90.6%	5.8%
Southern Univ.-Shreveport/Bossier City	91.5%	8.1%
Total for all public universities	23.6% (34,991 students)	70.3% (104,148 students)

Note: Figures are from 1988 and exclude American Indians, Asians, Hispanics and nonresident aliens. Source: Louisiana Board of Regents

In Louisiana, the court's order has also ignited an educational and political controversy fraught with irony. The four predominantly black public colleges want to keep things as they are now—and so do many black educators, who are in the unusual position of supporting publicly funded segregated schools. By contrast, the Louisiana chapter of the National Association for the Advancement of Colored People (NAACP) agrees with the court. Two of the state's top officials, both Democrats, are similarly divided. Governor Charles "Buddy" Roemer wants one system while Atty. Gen. William Guste, Jr., wants separate governance.

Many members of Louisiana's civil-rights community, which has struggled for nearly two decades to integrate the state's public colleges and universities, are enraged. "We wanted to end separate black schools, and now they want separate black colleges," says Raphael Cassimere, Jr., cochairman of the Citizens' Committee for Equity and Excellence in Louisiana's Universities. "It's separate-but-equal all over again." Rupert Richardson, president of the Louisiana NAACP, calls Southern University's resistance "embarrassing."

The controversy in Louisiana comes at a time when student interest in black colleges nationwide is rising. Enrollment at the nation's 87 public and private black schools has jumped 10 percent this year. That is due, in part, to an increase in the minority population—and also to a reassessment by some blacks of the merits of integration, especially in higher education. Predominantly black colleges enroll 20 percent of the nation's black students but award 40 percent of the bachelor's degrees earned by blacks.

Supporters of Louisiana's black colleges, reflecting similar sentiments elsewhere, contend that the

BEST COPY AVAILABLE

Study: Bill falls due for poor kids

Future costs will be great, report warns

By Judy Keen
USA TODAY

Those most affected by poverty are children under age 6, a new study says, and the USA will pay if their generation is trapped in a spiral of poverty.

About 5 million children — almost one of every four U.S. youngsters and twice the number of poor adults — live in families below the poverty line, says Columbia University's National Center for Children in Poverty in New York.

"We're really mortgaging our future by not investing in our kids," says Tim Smeeding, public policy and economics professor at Nashville's Vanderbilt University.

Children who grow up poor are more likely to do badly in school, become criminals, become unmarried teen parents, earn less and be on welfare.

And the report warns that poor children are more vulnerable to health problems, prenatal exposure to AIDS and drugs, abuse and neglect. The 1989 pre-tax poverty line: $9,890 for a family of three, $12,675 for a family of four.

In 1987, 32.5 million people lived in poverty; 13 million were under 18.

"We should be outraged and appalled that the country continues to allow this to happen," says James Weill of the Children's Defense Fund. "In the long run it's going to be very damaging to the country."

Young children are the USA's poorest age group because their young parents were shut out of the economic boom of the '80s, says Sheldon Danziger, University of Michigan professor of public policy.

"During this recovery, the young have fared much less well," he says. "The gaps between rich and poor have continued to widen."

Proposed solutions:

▶ The report recommends universal health insurance, better child care, unemployment insurance, affordable housing, education and job training reforms, programs to prevent teen pregnancy.

▶ Passage of a child-care bill, pending before Congress, that would increase federal income supplements for working-poor families.

▶ Boosting spending on Head Start and other programs for pre-schoolers and mothers with infants. "They work, but they're terribly under-funded," says Smeeding.

▶ Continued health insurance and child care help for adults who get off welfare.

"Why don't we reward people who go to work?" asks Rev. Harry Walker of the Sioux City, Iowa, Gospel Mission.

The report also refutes poverty myths. The facts:

▶ More than half of poor children live outside big cities.

▶ 53 percent have at least one working parent.

▶ Only 28 percent are in families entirely dependent on public assistance.

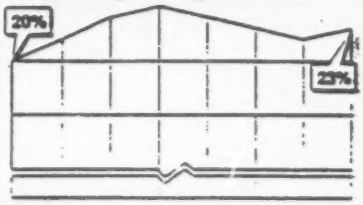
"I hope the report is the low point," says Danziger, who believes a higher minimum wage, tax breaks and new health programs will help rescue poor kids.

"We've neglected the problem for a decade," he says, "but now we're focusing on it."

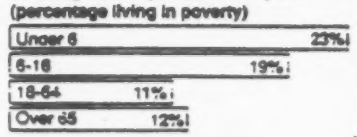
Poverty's youngest victims

In 1987, 23 percent of the USA's children under 6 years old were living in a household with an income below the poverty level.

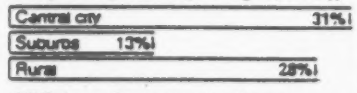
Percentage of children living in poverty during the '80s



Young lead parade of poor (percentage living in poverty)



City children most likely to be poor (percentage living in poverty)

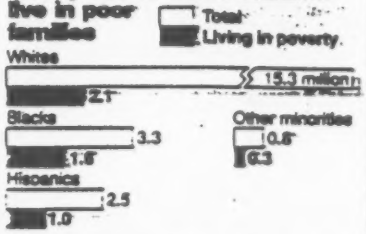


Children in poverty face serious risk of maltreatment

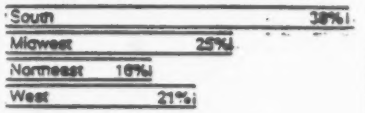
(rates per 1,000 children under 6)

Family income	Total	Abuse[1]	Neglect[1]
Under $15,000	54.0	19.9	36.8
$15,000 and over	7.9	4.4	4.1

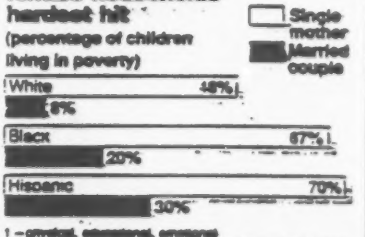
Nearly half of black children live in poor families



South is poverty pocket for the young (percentage living in poverty)



Children in single female households hardest hit (percentage of children living in poverty)



1 — physical, educational, emotional
Source: National Center for Children in Poverty, Columbia University (statistics are latest available, most from 1987)

USA TODAY

USA Today 4/16/90

Poor, but 'living well'

By Debbie Howlett
USA TODAY

In Pullman, W.Va. — the poorest town in the USA's 48th poorest state — Robert Grimm doesn't see much poverty.

"We've only got three families here on welfare," says Grimm, who owns the town's only grocery store. "The rest of the people are living pretty good."

On average, people here earn a yearly income of $4,606, says a new U.S. Census report on poverty. That's about half the statewide average and one-third of the poverty level for a family of four.

"People tend to think of poverty in exclusively urban, underclass terms," says University of Michigan researcher Greg Duncan.

About 75 percent of the 138 people who live in Pullman, a quiet little town named for the man who invented the Pullman railroad car, are retired.

Sonny Newman, a retired bread delivery man, and his wife, Georgetta, moved from New Jersey into a 14-room house on 30 acres. It cost them $70,000 two years ago. "I could come here and live a lot more cheaply," he says.

Newman notices little poverty among residents. "They have large gardens and they hunt. They live well."

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ECONOMIC

Nation prepares for loss of jobs in defense industry

By Louis Uchitelle
The New York Times

The U.S. economy can absorb large cuts in military spending without serious damage, economists say, although for a while, at least, tens of thousands of Americans will lose their jobs.

That will happen mostly because military spending will shrink faster than the civilian sector can expand to take up the slack.

By most estimates, the process could temporarily idle up to 100,000 people a year in the 1990s, most of them discharged from the military service against their wishes or laid off at weapons plants, which would then go unused.

The proposed military cuts, some calling for reductions of more than $100 billion a year by the late 1990s, would mark the fourth big cutback in military spending since World War II.

"What can you do with a tank factory?"

MICHAEL W. WYNNE, GENERAL DYNAMICS

But it would differ from the others in two significant ways.

Never before on the eve of a major reduction has the military represented so small a portion of the national economy: Less than 6 percent of the total wealth created in the nation last year.

As a result, the cutback will scarcely show up in the statistics that measure economic strength.

Nevertheless, this is the nation's first attempt to shrink military spending at a time of sluggish economic growth — when idle weapons factories and their workers are not really needed for civilian production.

The cutbacks might be hard to spot in the national statistics, but in a weak economy they could contribute to a recession in the early 1990s.

"Probably, the weakness in the economy today has something to do with the shrinkage in defense spending that has already taken place," said Robert Giordano, chief economist at Goldman, Sachs & Co.

"But to really take a sledgehammer to the economy, you would need cutbacks far bigger than anyone has yet proposed."

Even if the cutbacks turn out to be footnotes in the record books, they still inflict damage in places like Lima, Ohio, and Warren, Mich., where General Dynamics Corp. operates the only two factories still producing tanks in the United States.

The Army intends to end tank production in 1993, for the first time since World War II.

Related story 1C

If such plans go through, then General Dynamics insists that it will have to close its tank division, which employs 7,300 people and draws on a network of private suppliers that employ thousands more.

"What can you do with a tank factory?" Michael W. Wynne, a vice president of General Dynamics, asked rhetorically.

"You can make tractors and heavy earth-moving equipment, but Caterpillar already has that market sewed up. If there is no defense work to support these factories, then we'll have no alternative but to give them up."

Similar problems are hurting cities and towns in the Northeast, the mid-Atlantic and West Coast, the three regions where military spending is concentrated.

And a cutback in military spending brings subtle changes that affect millions of lives.

Among these changes, perhaps the most important is the impact on minority workers.

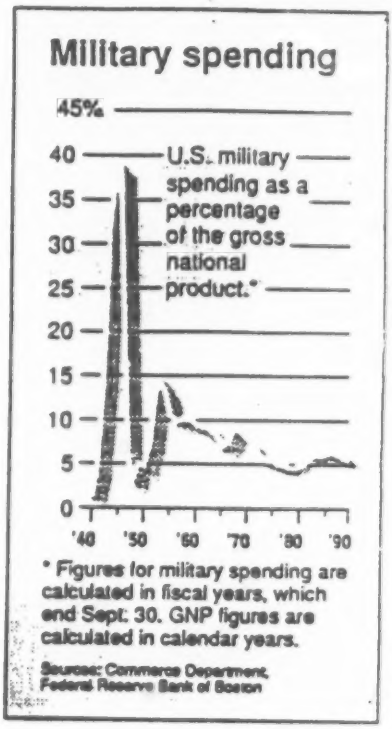
The armed forces and the Defense Department's civilian payroll have been a source of jobs and training for blacks and others who have been under-represented in the civilian sector.

In addition, weapons makers and military research laboratories often pay more than civilian employers, so the military cutback might lower the national wage level.

In Massachusetts, a center of arms research and production, military-sector wages averaged $33,000 a year in 1987, or 23 percent more than the average income in the private sector, according to a state government study.

More positively, a cutback in military spending would bring highly skilled people to the civilian sector.

Thirty percent of the nation's engineers and scientists work on military projects, and some would be freed to develop civilian products, said Lloyd Dumas, an economist at the University of Texas.



N.Y. Times News Service

"Take videocassette recorders," he said. "We invented the basic technology, and with that head start, if we had applied enough engineering and technology talent to developing the recorders themselves, we would be ahead in the field."

No U.S. company makes VCR's today.

Whatever the benefits or drawbacks, the biggest immediate issues, in the view of many economists and politicians, are retooling and retraining.

Factories that make tanks or fighter planes or missiles will need to be overhauled to make civilian products.

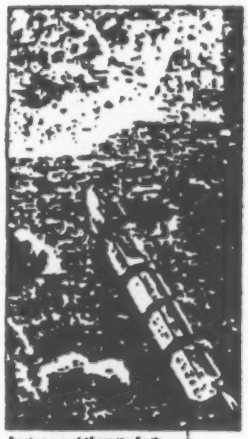
Above all, the U.S. economy in the 1990s will be shaped by the federal government's strategy for spending the "peace dividend."

The huge debate building over this issue offers two alternatives.

One would use the savings from the military sector to reduce the budget deficit, in the belief that a lower deficit means less government borrowing and thus lower interest rates on loans for everyone.

The other alternative is to spend much more on public works.

Even strong proponents of budget cutting acknowledge that the nation's deteriorating highways and bridges, water and sewer systems, airports and mass transit make companies reluctant to build new factories, no matter how low interest rates might be.



Frontispiece of "From the Earth to the Moon," by Jules Verne

MAKING SENSE OF THE '90s

Where CO_2, bio-tech, the end of empires, a new knowledge explosion and anti-knowledge reaction, a youth-heavy third world and graying first world are taking us.

By Earl W. Foell

AT THE MOMENT IT'S THE GRAY Nineties. Nobody's colored them in. But everywhere you look some columnist or $5,000-an-hour adviser to industrialists is brashly trying to paint in details of the new decade.

In almost every presidential hideaway, foreign ministry, defense ministry, intelligence headquarters, corporate board room, think tank, scientific association, and investment house the new year and new decade are bringing on a spurt of planning ahead. The habitual grasshoppers of government are playing ant.

Not to be left behind, let's look, just as brashly but at no charge, at where we're headed in the '90s and the start of the next millennium.

Obviously what's of primary importance to each of you is that you and your family survive, make progress, and learn a few things in the forthcoming decade. And that requires that the home planet and its species survive, and experience gradual rather than radical change on its surface and thin skin of atmosphere. So the chief two-legged species hereabouts needs to put into practice what a majority of its adults probably understand in their more thoughtful moments. That's population control, CO_2 control, soil-loss and forest-loss control, drug-use control, living-on-credit control—in short, self-control. All of it simple; none of it easy.

Next, to color in the '90s and beyond, avoid both rose-colored glasses and gloom-and-doom dark glasses and do what architects and fashion designers do: Pay attention to both the history books and the innovators. We're safely past 1984, as events in Moscow and Eastern Europe show, and heading for 2001, as many of the innovations I'll list in a minute indicate. But before joining the absolutists who have prematurely proclaimed the End of History, the End of the English Novel, or the End of the Democratic Presidency in recent months, remember two other dates: 1815 and 1848.

The gents who ran the Congress of Vienna in 1815 not only put Europe back into shape after Napoleon ran roughshod through it, they paved the way for the return of conservative monarchy in the wake of the unsettling French Revolution, Napoleon's perestroika program, and his imperial final chapter. In 1848, the rigidity brought on by that restoration of monarchy came widely unglued in an upsurge of Solidarity-like popular unrest that swept Europe. But that push for free institutions fizzled—or rather submerged to reappear, sporadically, in American abolitionism, Russia's freeing of serfs, Gandhism in India and South Africa, the 1919 and 1989 Chinese student protests, 1956 Hungarian revolution, 1968 Prague Spring, 1979-80 Gdansk shipyard uprising, and 1989's domino run of protest through Moscow's inner and outer empires, climaxing at Berlin's modern wall of Jericho.

If there are lessons for the '90s in this over-condensed history, one is that China's younger generation will be heard from again. The liberation that Deng started and stopped is not over yet. A second, somewhat opposite, probability is that the great popular outburst in Eastern Europe will, like 1848, settle into something less liberated. What's likely is a scenario in which Hungary, Poland, East Germany, and Czechoslovakia become economically associated with the new West European market while remaining, like Finland, politically and militarily respectful of Moscow.

Before becoming an editor at WM, Earl W. Foell covered stories in Eastern and Western Europe, Japan, China, the UN, and Africa for The Christian Science Monitor and The Los Angeles Times. He also interviewed leaders in many of those nations. His career has included stints as education writer, architecture critic, book critic, urban affairs writer, editorial writer, managing editor, editor, and editor in chief at the Monitor.

We're living in a heady period. People don't often get to see an empire implode. The Roman, Ottoman, Mogul, British, and Portuguese empires —to name a few—died about as slowly as a Wagnerian soprano. But there, on camera for all the world to see, was the Romanov empire, turned into a conglomerate by Stalin, being dismembered in record time. Proof of the power of global knowledge and the aspirations of average people. But we shouldn't exaggerate what is already extraordinary into Utopia. History has not been suspended.

Now, as promised, here's a miscellaneous mix of innovations and political and economic probabilities for the coming decades. It's purposely unmethodical, intended to provoke thinking not resurrect Nostradamus. Watch for:

- The bio-engineering of plants to make more efficient food-production use of the sun's energy through photosynthesis. Also, further genetic engineering to add nitrogen-fixing roots to an array of vegetable and fruit plants, allowing them to partially self-fertilize as the legume plants (peas, beans, lentils) do. Biologists are already at work on nitrogen-fixing grains.
- A new oil pinch that will spur progress on photovoltaic cell efficiency, fusion research (hot and big more likely than cold and in a beaker), and energy-efficient buildings and vehicles. The vehicles will almost certainly include more improved electric cars and delivery vans in urban areas and more natural gas cars.
- Mach-2 air travel (double the speed of sound) and Mach-1/2 trains. Neither environmental concerns nor near-instantaneous global business communication systems will fend off corporate desire for these long-expected transport speedups.
- The start of multiracial South African government, whose black leadership will eventually become the most influential in Africa. Western firms, especially those with good labor and human rights policies, will find a receptive business climate.
- Sporadic but nevertheless real progress at curbing AIDS and drug abuse, largely because of a new generation's health fears. The present crisis is more deep-seated than the late 19th century's similar experimentation with drugs, but the reasons for turning the corner are much the same.
- Less success at curbing nuclear and poison gas missile proliferation, especially in Israel, Syria, Iraq, India, and Pakistan.
- Cars, and their engines, made increasingly of high-strength machined plastics (except, of course, for burlwood dash and leather seats on high-tech upscale models; see Jules Verne story below).
- Japan to continue its accumulation of disposable capital to become at least as powerful in banking/economic terms as Britain or the US at the height of their global power. But European and US competition in world markets should begin to halt the growth of Japanese market share in many global industries.
- More interactive computer instruction to aid science, math, and geography education. One major virtue: allowing students to proceed at a pace to fit their varied learning speeds.
- The globalization of baseball—after all, the two economic superpowers, Japan and the US, are cultural imperialists for the only sport where a balk means you advance.
- Low-energy steel smelting, using a rapid solidification process that can spin out razor-blade-thin steel at the speed of a race car.
- First steps toward space colonization, starting with experiments in closed-cycle, self-sustaining living in orbiting spacelabs.
- Thailand and giant India joining the Asian tigers as economic success stories, despite Thailand's AIDS problem and India's perennial bouts with factionalism and poverty.
- Cuba, Ethiopia, and even Albania joining the stampede away from one-party communism.
- More joint research and development efforts involving two or more nations' firms. Examples: US-Israeli computer-controlled drip irrigation systems for arid regions, Japan-US computer-operated hydroponic greenhouses for growing vegetables in colder climates.
- More firms daring to build the costs of environmental safeguard technology into pricing for their products.
- A quiet struggle of isms in the "one European house"—Roman Catholicism, Protestantism, socialism. At issue: abortion, the role of labor, subsidy politics, and relations with the Islamic world across the Mediterranean and at Russia's back door.

But enough. That's a random taste of possibilities and probabilities. What must be remembered is that all the surface stuff—the baseball bats and high-strength plastic cars—float on an underlying magma of what we might call the Big Topics. And those big topics are not unlike that classic choice: the lady or the tiger. Open one door and the '90s and beyond are the best of times. Open the other, and...

Because of their ambiguity, the Big Topics are best phrased as questions:

- Will world production and trade increase faster than world population—making a bigger pie of goods and services to slice? One crucial fact here is that about 95 of every 100 children born in the '90s will be born in third-world nations.

- With the poor nations youth-heavy and industrial northern nations graying and experiencing labor shortages, will labor come to where the jobs are? Or will jobs go to where the labor is? North America has generally imported labor via Asian and Latin immigrants; Japan has subcontracted out work to its Asian neighbors as far away as Sri Lanka and Bangladesh. Both the US and

There scribbled Verne, a bourgeois French stockbroker living in a world that didn't even believe earth flight was possible, brashly predicting rocket trips to the moon 104 years before they happened.

the Asian boom states are likely to export work to Latin America in coming decades. Western Europe to East Europe and the Mediterranean shores.

■ Will we burn so much fuel to run factories, computers, offices, vehicles, and houses (and obliterate so much carbon dioxide-imbibing vegetation) that we eventually fry the globe's land masses and flood its coastlines and port cities?

■ Will the population of those who benefit from the knowledge explosion increase faster than the population of those who are left behind and make easy recruits for the anti-knowledge explosion? (That ranges from the merely uneducated to those embracing the occult, racism, the drug culture, or some destructive form of fundamentalism.)

■ Will global television (and all its kindred electronic networks) make irreversible the spread of democracy, freedom of ideas, freedom to travel, free movement of labor, and freedom to compete? Or will "Dallas" and "Wheel of Fortune" in 37 languages become the opiate of the people?

■ Will enough of each new generation learn sufficient self-discipline to avoid the excesses of either unproductive hedonism or uncreative authoritarianism? (That means enough self-discipline to demand that their children be basically well educated, to save more than they borrow, to require that both politicians and consumer products live up to their promises or be dropped.)

■ Will people of all cultures gain the kind of spiritual underpinning that provides both individual stability and concern for the larger human family?

If history is any guide, none of these giant either/or questions will be answered decisively. The knowledge explosion and movements to reverse it or escape it will, for instance, continue to develop in tandem. Recognizing this, realists among government leaders and educators simply aim to expand the portion of the population that benefits from and understands the new knowledge. That's the only way their nations will remain competitive in the world of the next century. Skeptics would say, rightly, that such a pragmatic approach is merited, because much of the "new knowledge" is provisional anyway and should be treated as such, not enshrined as dogma.

Nor is the global communications explosion likely to be a carrier only of the winds of freedom. Both gold and dross are circling the globe—Adam Smith, Tiananmen Square, Geraldo Rivera, the riddled Berlin Wall, Vanna White, Fidel Castro, Baryshnikov, and Texas chain saw massacres. Docudramas chase documentaries. Data banks are storing more information about more subjects than the Library at Alexandria to the hundredth power. But they are also, inevitably, storing misinformation and obsolete information. And even the most educated citizens have less and less time to probe the memory banks for all the gold that is available.

By now you may be impatiently muttering that you know the Big Topics and they have remained largely the same for years, some of them for centuries. I mention them as one more reminder that what's most important in history often fits Ecclesiastes' no-new-thing-under-the-sun dictum. And also to remind us that future-forecasting is a risk-prone business at best.

How else can you explain why one noted economist predicts in convincing detail that an era of prosperity and a 4,000 Dow are just around the corner and another equally noted economist predicts a global depression? Fortunately, there's nothing about the futurology trade that the future won't cure. The problem is there are too many variables even for economists with the biggest computer models to know how the whole Rube Goldberg contraption is going to work from year to year. But that's no reason for despair. The 4,000 Dow economist is probably right in the long run, even if we dip through a recession to get there.

As we look back over history, two things are clear. (1) The pluses outweigh the minuses; mankind has progressed. But (2) no generation has put things in such clockwork order, morally or logistically, that it leaves future generations with little to wrestle with. As the articulate paleontologist Stephen Jay Gould argues, history is both time's arrrow and time's cycle. It repeats certain themes and variations (seldom the exact melody again) in cycles, but it also moves forward like an arrow. "Forward" does not *guarantee* moral ascent or even improved individual value of life, merely increased knowledge with which to acquire (or ignore) wisdom.

The kind of forecasting and advance planning that all the ministries and think tanks (and this column) are venturing at this season mimics the bumbling forward of history. It gets many details wrong, but it generally moves us forward. It does so by forcing us to make use of the highly developed human capacity to think rationally and plan ahead.

A final example, drawn from history, makes the point.

In 1865 Jules Verne wrote his classic novel "From the Earth to the Moon." It was a sci-fi triumph. There scribbled Verne, a bourgeois French stockbroker living in a world that didn't even believe earth flight was possible, brashly predicting rocket trips to the moon 104 years before they happened. A big step for fiction, a small step for mankind.

But his publisher decided to add pictures. And Verne's illustrator didn't have what George Bush calls the vision thing. The artist drew Verne's boldly imaginative rocket flight in stolid, earthbound fashion, making it look for all the world like a Paris-Lyon steam train with first- and second-class carriages, velvet plush seats, and brass gaslights.

The forecasting business has always been thus. Win some, lose some. But one forgives the gaslights if the broad concept of getting to the moon inspires future humans to act.

AN AMERICAN VISION FOR THE 1990s

■ by the Staff of FORTUNE

SIXTY YEARS. An era. An adult lifetime. If you want to grasp how long it has been since FORTUNE was launched, just consider: In 1930 fewer than 50,000 cars traveled the roads of Japan—94% of them Made in America. Penicillin was yet to be purified and put to general use. Television had not been invented. Nor jet planes, electronic computers, radar, xerography. We had sex, of course, but not much in the way of drugs, and nothing resembling rock-and-roll.

In this article FORTUNE's staff will not attempt to predict the next 60 years. That would be too easy; who, after all, would remember what we said come the year 2050? Instead, we offer our best estimate of what to expect from today until the year 2000—in politics, in the economy, in science, and in society at large.

During the 1990s and for some time beyond, the U.S. will remain the world's only true superpower. But consider for a moment the implications of that word. We emphatically do *not* mean that America will command this position by brandishing its military might. Yes, U.S. arms are still the world's strongest, and welcome among friends who seek to preserve the peace in Europe and Asia. But the U.S. does not, and should not, relish the role of global cop and principal bankroller for the Western alliance. Its very success, crowned by the crumbling of Communism from Czechoslovakia to Nicaragua, entitles it to lay down part of this costly burden. The enemy has grown less menacing, the allies more capable.

America's true strength will be found elsewhere. The U.S. remains by far the world's most vigorous economy (with a GNP of $5.2 trillion, more than 40% larger than Japan's). It is the biggest market for foreign goods, the biggest magnet for foreign capital, the biggest investor overseas. In Europe alone, Americans spent $15 billion buying companies last year, nine times as much as the Japanese.

Though its export performance is often decried and indeed isn't what it should be, the U.S. still runs neck and neck with West Germany as the volume leader. America's share of global markets no longer approaches 50%, as it did when Europe and Japan were dragging themselves off the mat in 1950. But the present share, 20% to 25%, is as large as it was in the more normal years of commerce before World War II—and where it has stood since the early 1960s.

AMERICA'S CONTRIBUTION to the world will continue to be in the realm of ideas and ideals. Military strength contained Communism, yes, but what vanquished it, what showed it up as the hopelessly hollow box that it was, was an idea—liberal democracy—and its phenomenally successful application in America, Europe, and Asia.

Scientific ideas are traveling fast too. The world now stands on the verge of transformational developments in molecular biology and computers. Ralph Gomory, former head of research at IBM and currently president of the Alfred P. Sloan Foundation, predicts with "total confidence" that computers will become 100 times cheaper in the next two decades. This means that most of the information revolution is still ahead of us. In the 1990s and beyond, thinking machines will process more information faster, affecting our lives more intimately and pervasively than we can now imagine.

Coming breakthroughs in biology deal with information processing of a different type. Practitioners of this

PHOTOGRAPH BY ANDY LEVIN

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v science are unraveling the mysteries of DNA, the croscopic threadlike tape holding the coded information that dictates the structure and function of living things. This will lead to an unprecedented understanding of how man, animals, plants, and microorganisms function. That knowledge will then be used to make products and to create whole new industries that don't exist today.

These and other developments will find their way into practical application through the initiative of feisty entrepreneurs and multinational behemoths. America is famous for creating both. Some 685,000 businesses were born in the U.S. last year, most quite ordinary of course, but many founded on original ideas. Global corporations, purveying the goods and services that help people lead better lives, will continue to project American power in the years ahead. Operating out of sheerest self-interest, they can be a surprisingly effective force for progress. At their best, they hire and promote on the basis of merit and invest on the basis of potential, while governments too often bestow their favors—a subsidy here, a le barrier there—on basis of narrow political advantage.

For all its many shortcomings, America promises to remain a beacon for immigrants. Since 1970 it has taken in more of them than the rest of the world combined. In the 1980s the inflow was the largest of any decade of the century—around 650,000 last year (not counting illegal entrants). In the 1990s the U.S. will be wise to admit even more skilled people. This will bring profound economic benefits, for immigrants carry with them creativity and energy—both particularly important in an information age when competitiveness depends on the qual- of a nation's brains. ——migrants also tend to be young, one reason the U.S. in the 1990s will have most youthful, and potentially most productive, w force in the industrialized world.

Still the promised land: Ewelina Balcewicz, 4, a recent immigrant from Poland

As America's 76 million baby-boomers age, they w exert their accustomed influence on the shape of soci With the oldest of them now 44, growing numbers will through the personal changes common to people w arrive at midlife. The desire for independence, for cont of one's time, for a more balanced life, will becom prime value. Increasingly, boomers fantasize about qu ting the large corporation and starting businesses of th own. How will corporations manage people who thi like that? By giving more than lip service to the idea t employees need autonomy, higher rewards for perfo mance, and an enriched sense of purpose.

Successful companies will constantly learn and ada restructuring radically if necessary. That means m than cost-cutting, a lot more. It means delivering the promise of partici tory management, all ing employees a say how the organization designed, how work assigned, how they compensated. The lat studies of business sh that providing work with a sense of particip tion increases product ty far more than incent pay. Turning employ loose to figure out t best way to do the can lead to double-d surges in output.

FORTUNE's staff econ mists forecast that U.S. economy will gr an average of 2½% 3% a year during 1990s, about the same in the 1970s and 198 Contrary to popular w dom, America is not s ing into a hamburg flipper economy. Indu trial production will pand at roughly the sa rate as real GNP (40% which is in manufac ing). We anticipate flation averaging 4½ to 5% a year during t decade—dreadful co

pared with the 1½% to 2% of the 1960s but not much worse than it has been lately. As import competition lessens, profits will grow faster than nominal GNP, about 10% a year. The trade deficit is likely to shrink—helped by a decline in the dollar of some 10% in the next few years—but it will not disappear. With the Social Security surplus counted in, the federal budget deficit will probably diminish to zero by the year 2000.

WILL RECESSION STRIKE during the decade? Yes, at least once. We have not repealed the economic cycle. And the Federal Reserve may well raise interest rates to fight inflation, edging the economy into decline. Trouble is, the present weight of corporate and personal debt could turn a recessionary gully into the Grand Canyon.

The overleveraging of American corporations will take years to set straight. Many leveraged buyouts will drift into Chapter 11, and defaults on junk bonds will continually make news. The time to repent is nigh: Look for a decline in the number of new LBOs and financially engineered hostile takeovers.

In the past few months major corporations have grown fearful of debt. We are entering a period in which equity capital and financial solidity will be prized. Companies will reduce leverage by squeezing dividends and building up retained earnings. The junk bond market will remain shaky, and traditional, conservative lenders—insurance and finance companies—will regain the power they had lost to the purveyors of junk. For borrowers that will mean tighter money and tougher terms.

America's greatest challenge will be one of values. The U.S. has its own Third World country within its borders: an increasingly deprived, separated, and self-perpetuating underclass—mostly but certainly not entirely black and Hispanic. With homelessness, poverty, violence, drug addiction, inadequate health care, and the well-known woes of its education system, America presents an ugly face to the world. Many Europeans and Asians feel there is little they have to learn from the U.S.—and much that it could learn from them—about combining a more civil society with economic prosperity.

The economic growth foreseen by FORTUNE's economists will not do much by itself to lessen poverty. So how do we break the heart-rending cycle of multigenerational destitution? Do we resort to totalitarian acts, taking children away from unfit mothers and unhealthy environments? Who will judge a mother's fitness? Who will provide a better environment? But if we do nothing, how will we change the nation-sapping cycle of self-destructive behavior?

We at FORTUNE value free markets but recognize that they alone cannot solve this American dilemma. Taking some first steps will require government incentives and government spending. On the basis of what we know now, more money would be well allocated to Head Start, housing vouchers, and tax credits for the working poor, to name a few programs. But we still have much to learn about what will work and what will not, how to help the needy without destroying their will to help themselves.

In the international political ferment now boiling, this search for the proper balance between security and risk taking, dynamism and the welfare state, reaches far beyond America's borders. Many who sought refuge in Communism years ago did so in hopes of finding a way to ameliorate what they saw as capitalism's cruel injustices. That Communism failed them does not imply that their complaints were hypocritical or their motives insincere. Now as ex-Communist nations grope their way toward liberal democracy, the danger is that in their euphoria they will expect democracy to do too much—and give up too easily. Simple totalitarian solutions can exert an irresistible pull on the desperate.

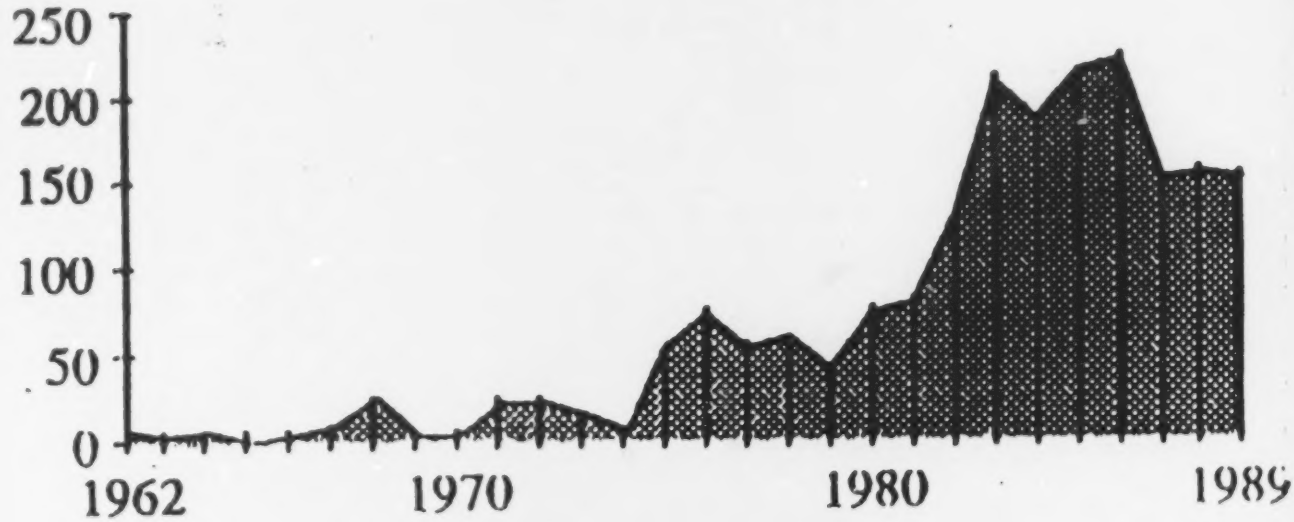
PERHAPS AMERICA'S richest gift to the rest of the world now would be to show that racial and ethnic harmony can work, that the relatively affluent 85% of society can help lift the 15% who remain poor, often despondently so. This will require a deeper sense of community, more Americans working together with values that are inclusive, nurturing, and caring, as opposed to competitive, individualistic, and selfish.

When FORTUNE began, America had a vision—in fact, it has had many visions over the years. Most have been realized, some beyond our wildest dreams. Americans pulled out of the Depression and helped defeat fascism. They carried the banner of democracy and helped spread affluence around the world. They have done much to win the Cold War and to inspire Communist nations and Third World states to search for their own forms of social democracy or market capitalism, to find the kind of society that would encompass the advantages that the U.S. clearly has, along with the social safety nets it has not yet learned to design.

So what is the American vision now?

To get on with the work of building a society that is open, diverse, pluralistic, and free. A society that is nonracist and nonsexist but believes in equality of opportunity, not equality of result. We spent much of the 20th century saving a decaying old world order from its pent-up pathologies. If we are wise, we can move ahead in America's third century by addressing our unmet social needs and promoting economic health at home while remaining first among equals in building a new—and free—global political order. ◻

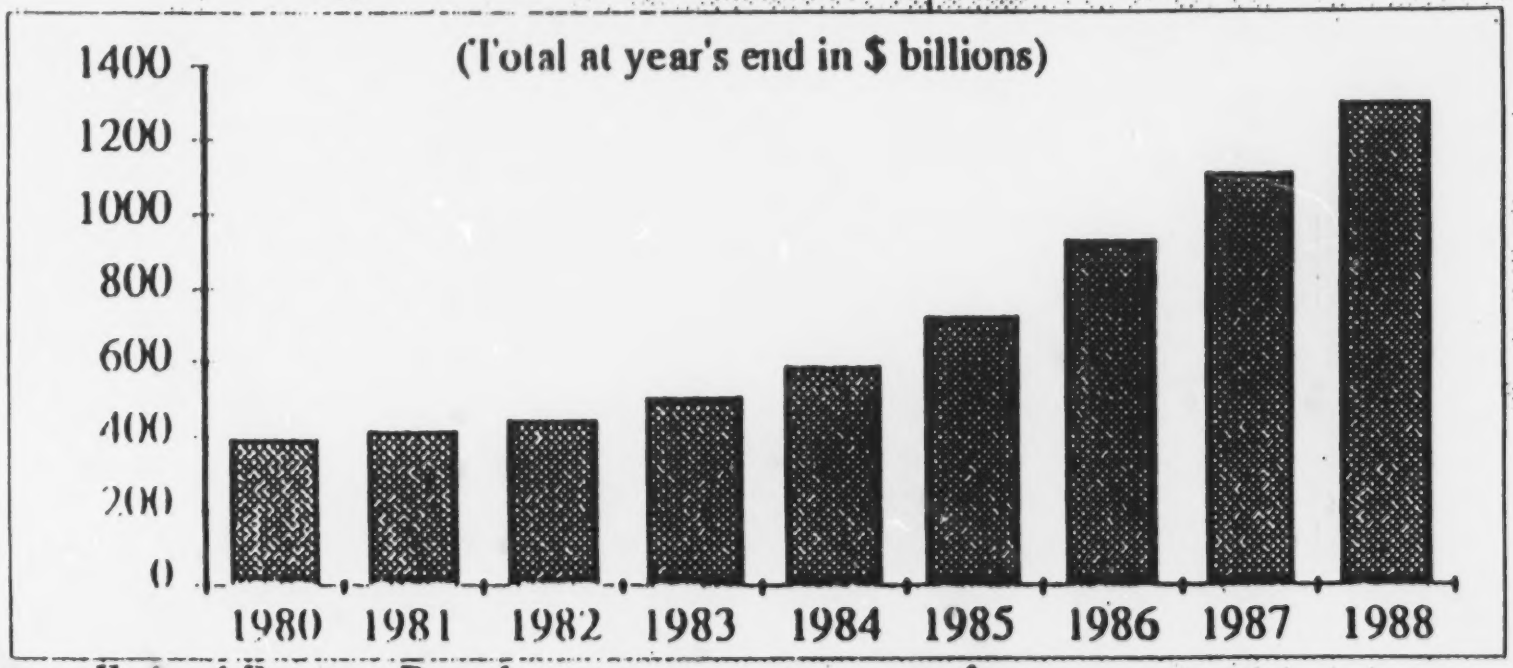
The Federal Deficit (in $billions)



Source: Congressional Budget Office

Youth Policy March 1990

Foreign Investment in the United States



Source: Federal Reserve Board reprinted in Youth Policy March 1990

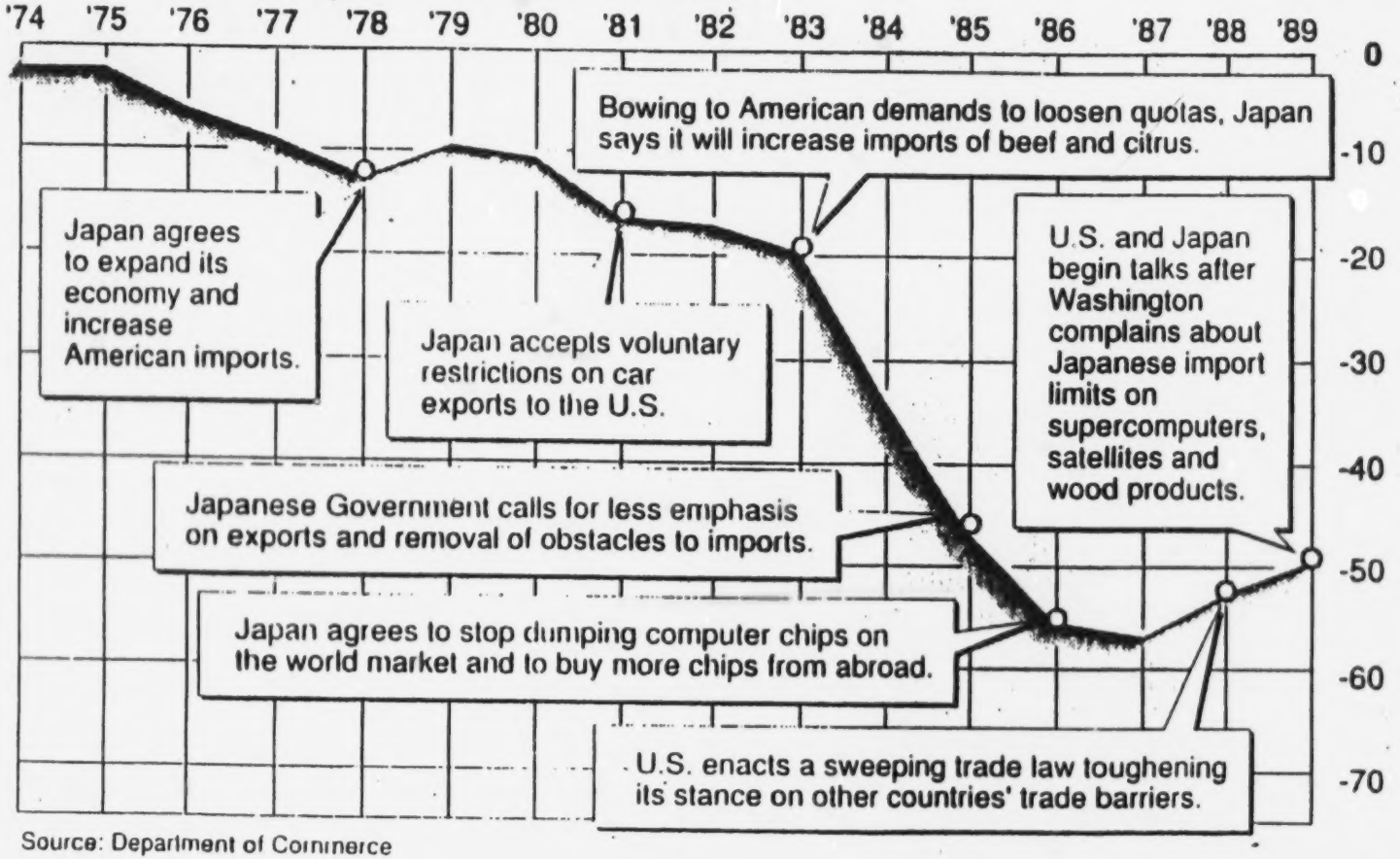
THE UNITED STATES AS A DEBTOR NATION: 1980-1992

Year	United States Net Foreign Debt
1980	$95.10 billion
1981	129.99
1982	125.73
1983	78.48
1984	-7.46
1985	-122.97
1986	-274.63
1987	-453.46
1988	-591.65
1989 (Projection)	-706.52
1990 (Projection)	-830.93
1991 (Projection)	-966.52
1992 (Projection)	-1,104.88

Source: *United States External Adjustments and the World Economy*, by William R. Cline, Institute for International Economics, Washington D.C., 1989, p. 94-95.

Nice tries

The United States trade deficit with Japan has not narrowed, despite periodic efforts to reduce it. The gap is shown in billions of dollars, on scale at right.


'74
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Japan agrees to expand its economy and increase American imports.
Japan accepts voluntary restrictions on car exports to the U.S.
Bowing to American demands to loosen quotas, Japan says it will increase imports of beef and citrus.
U.S. and Japan begin talks after Washington complains about Japanese import limits on supercomputers, satellites and wood products.
Japanese Government calls for less emphasis on exports and removal of obstacles to imports.
Japan agrees to stop dumping computer chips on the world market and to buy more chips from abroad.
U.S. enacts a sweeping trade law toughening its stance on other countries' trade barriers.

Source: Department of Commerce

NYTimes 2-13-90

Clouded Economy Prompts Colleges to Weigh Changes

Unprecedented interest seen in private-sector strategies

1/31/90

By KAREN GRASSMUCK

Officials of both public and private universities across the country are bracing for an unfavorable economic climate in the 1990's.

Predictions that the mounting federal deficit will block increases in public financing are causing worry, and talk of a possible recession also contributes to the economic cloud that hovers over higher education's view of the next decade.

As a result, numerous colleges are beginning to make changes that borrow heavily from the transformations that swept American industry in the 1980's, when stiff foreign competition forced many corporations to streamline their operations or go under.

As if torn from the pages of a marketing textbook, terms like "customer orientation," "market niche," and "client relations" are creeping into the lexicon of college administrators with increasing frequency.

Chron. of High Ed

Spiraling Prices for Lab Equipment

Colleges have borrowed cost-cutting methods from the government and the private sector on a piecemeal basis in the past, but experts in finance say an unprecedented interest in private-sector strategies is now sweeping higher education as administrators seek a formula for assuring their colleges' financial viability through the end of the century and beyond.

Judging by the seriousness of the challenges ahead, colleges may need all the help they can get. Spiraling prices for laboratory equipment and facilities are raising

The U.S. Stake in Reunification

NY Times 4-1-90

By JOHN J. LAFALCE

THE coming unification of Germany — a virtual certainty in the aftermath of last month's first free Parliamentary election in East Germany — provides the United States with a major opportunity to take commercial advantage of Central Europe's sudden opening to the West.

In the short term, East Germany itself will remain an expanding market for American goods. This is the clear impression I received in numerous talks with East Germany's new entrepreneurial class while visiting Berlin earlier this year. There are already favorable patterns. Within the last week, a French-American telecommunications company announced plans to overhaul East Germany's outdated telephone network, and General Motors Corporation and Automobil-Werk Eisenach, East Germany's largest auto maker, will form a joint venture which could ultimately produce 150,000 cars annually.

By moving into East Germany today, American companies will also improve their competitive position within the European markets of the future — beginning with Central Europe. Experts believe that once a large volume of West German capital begins flowing into the eastern part of the country, today's East Germany could become what South Korea and Taiwan have become for Southeast Asia: a dynamic engine of export-driven growth. Similar considerations apply to the European Community. A stronger American market position in East Germany today virtually guarantees America a stronger competitive position in the integrated European market after 1992.

But how do we get from here to there? Achieving a stronger American position in a unified German market will require much stronger policy direction from Washington. Broadly speaking, Congress must press the Bush Administration to make good on its oft-repeated commitment to remove a crippling array of legal obstacles that continue to weaken our competitive position throughout Central Europe and the Soviet Union. East Germany's operations abroad have not prevented our West German, French or Italian allies from providing appropriate amounts of export finance and political risk insurance to their firms. We should do no less. Both the Export-Import Bank, which just a few days ago combined Czechoslovakia to participate in its programs, and the Overseas Private Investment Corporation should be moving into the East German market without further delay.

Congress should also insist on radical changes in our self-defeating export control policies. At last month's Coordinating Committee for Multilateral Export Controls — called Cocom — meeting in Paris, for example, the United States for the first time agreed that companies no longer need export licenses to sell high-tolerance machine tools, 32-bit microcomputers and a range of telecommunications equipment to the rapidly dissolving Eastern Bloc. Far bolder American steps are required.

A unified Germany has vast commercial potential — if we are ready to exploit it.

THE first order of business for Congress is to hold the Administration to its promise to significantly reduce the number of so-called "off the shelf" — easily available — items which inexplicably remain on Cocom's commodity control list and could with little difficulty be successfully marketed in East Germany. Simultaneously, the United States should accelerate multilateral efforts to reduce drastically the number of truly strategic goods we wish to remain on the Cocom list.

Thinking about future American initiatives toward East Germany raises the inevitable question of how long and under what conditions we will be able to conduct negotiations with an existing East German Government.

This is a matter over which Washington has little, if any, influence. The most plausible assumption is that Bonn will continue to treat East Germany as a separate economic entity for the foreseeable future. Far from discouraging an active American presence in the eastern part of the country, a variety of geopolitical and economic considerations suggest that, if anything, Bonn will favor an expanded American commercial presence in that part of the country.

To facilitate matters, both East Germany and the United States need to dispose of some old business. On the East German side, the new conservative coalition should accelerate efforts to settle material claims by American citizens for property expropriated by the Communist authorities 40 years ago. Similarly, East Germany needs to acknowledge forthrightly its responsibility for crimes against the Jewish community during the period of the Third Reich and make appropriate financial amends. Combined with recent steps to liberalize emigration procedures, the above East German actions should in turn enable the Administration and Congress to take the second logical step by granting most-favored-nation treatment to East Germany, as Japan, Sweden and the European Community have already done. Taking such a step at this critical time would go a long way toward putting our commercial relations with a transformed Germany on a new, more profitable footing. The stakes, to put it mildly, are huge. ■

John J. LaFalce, Democrat of New York, is a member of the House Banking Committee and chairman of the House Banking Committee Task Force on the International Competitiveness of U.S. Financial Institutions.

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Third World Increasingly Dependent on Imported Grain

Perhaps the best indicator of long-term shifts in food production relative to demand can be seen in the changing geographic pattern of world food trade. In 1950, most of the grain in international trade flowed from North America to grain-deficit Western Europe. The rest of the world was essentially self-sufficient. That has changed dramatically in recent decades. Since mid-century, North America has increased its grain exports more than fivefold, from 23 million to 119 million tons, emerging as the world's breadbasket.

Latin America became a grain-deficit region in the 1970s, with net imports of roughly 11 million tons by 1988. Despite a vast land area, Brazil now regularly imports both wheat and feedgrains. These imports plus those of Mexico, with its growing food deficit, and of several smaller countries more than offset exports from Argentina.

Africa, a largely agrarian continent beset by environmental deterioration and a record population increase, has become heavily dependent on imported grain as it tries to offset a two-decade decline in per capita production. Countries in the northern tier — Egypt, Libya, Tunisia, Algeria, and Morocco — now bring in half the grain they consume. Even with continental imports of an estimated 28 million tons in 1988, millions of people in sub-Saharan Africa were left hungry and malnourished, some on the verge of starvation.

The combination of a small and shrinking cropland area per person and rising prosperity in many countries has made Asia the leading food-importing region. Its purchases surpassed those of Europe during the mid-1960s, and all indications are that they will continue to rise during the 1990s and beyond.

Eastern Europe and the Soviet Union, which were importing at record levels in the late 1970s and early 1980s, are slowly reducing their dependence on outside grain. Whether they reach self-sufficiency will depend heavily on the success of Soviet agricultural reforms.

Western Europe is perhaps the most interesting regional story. In the early 1980s, it ended two centuries of dependence on imported grain, a dependence that began with the Industrial Revolution and the exchange of manufactured goods for food and raw materials with the rest of the world. Steadily advancing farm technologies, farm-support prices well above the world market level, and a population growth rate that is approaching zero have combined to push the region's net exports above those of Australia.

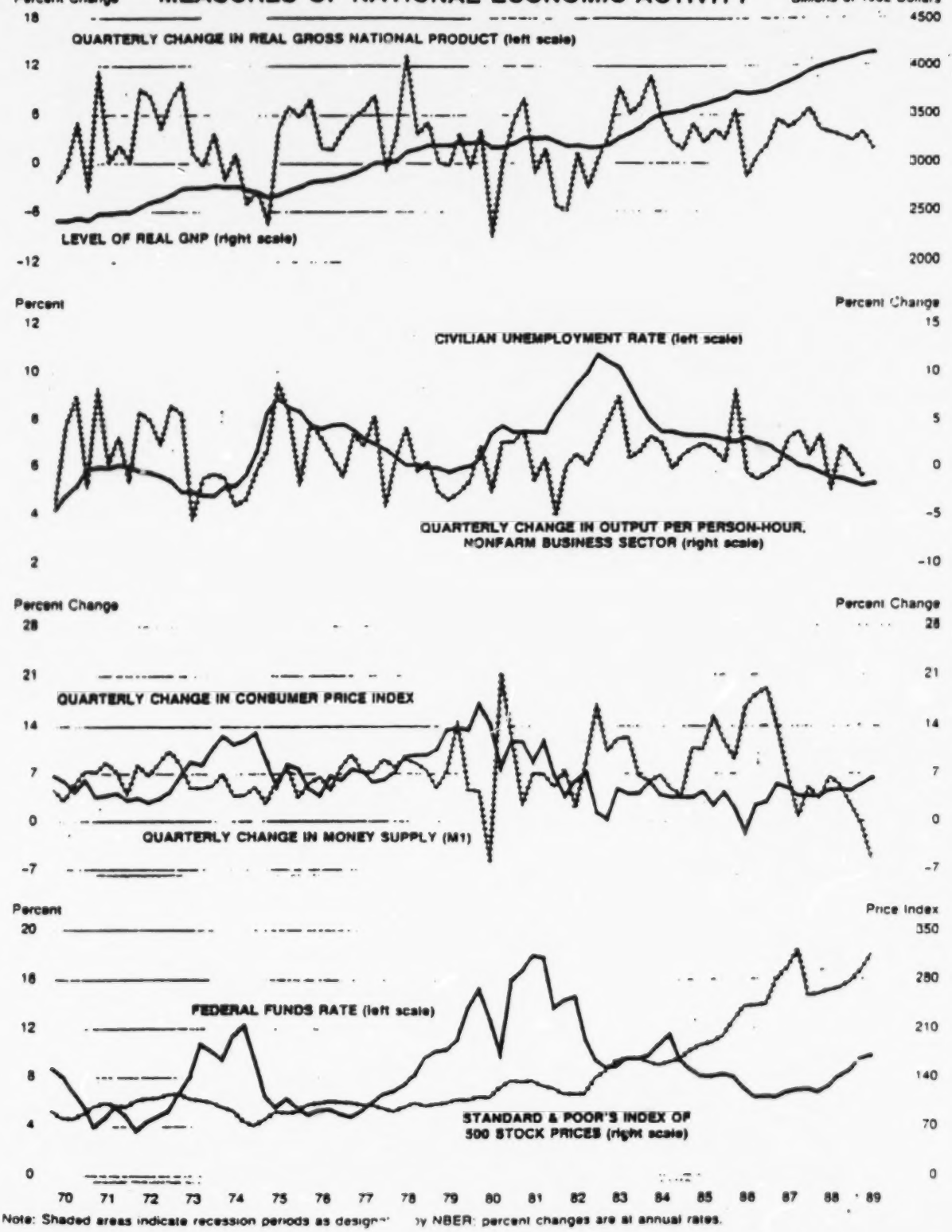
— Lester R. Brown

The Changing Pattern of World Grain Trade 1950-88[1]

Region	1950	1960	1970	1980	1988[2]
	(million metric tons)				
North America	+23	+39	+56	+131	+119
Latin America	+1	0	+4	−10	−11
Western Europe	−22	−25	−30	−16	+22
E. Europe and Soviet Union	0	0	0	−46	−27
Africa	0	−2	−5	−15	−28
Asia	−6	−17	−37	−63	−89
Australia and New Zealand	+3	+8	+12	+19	+14

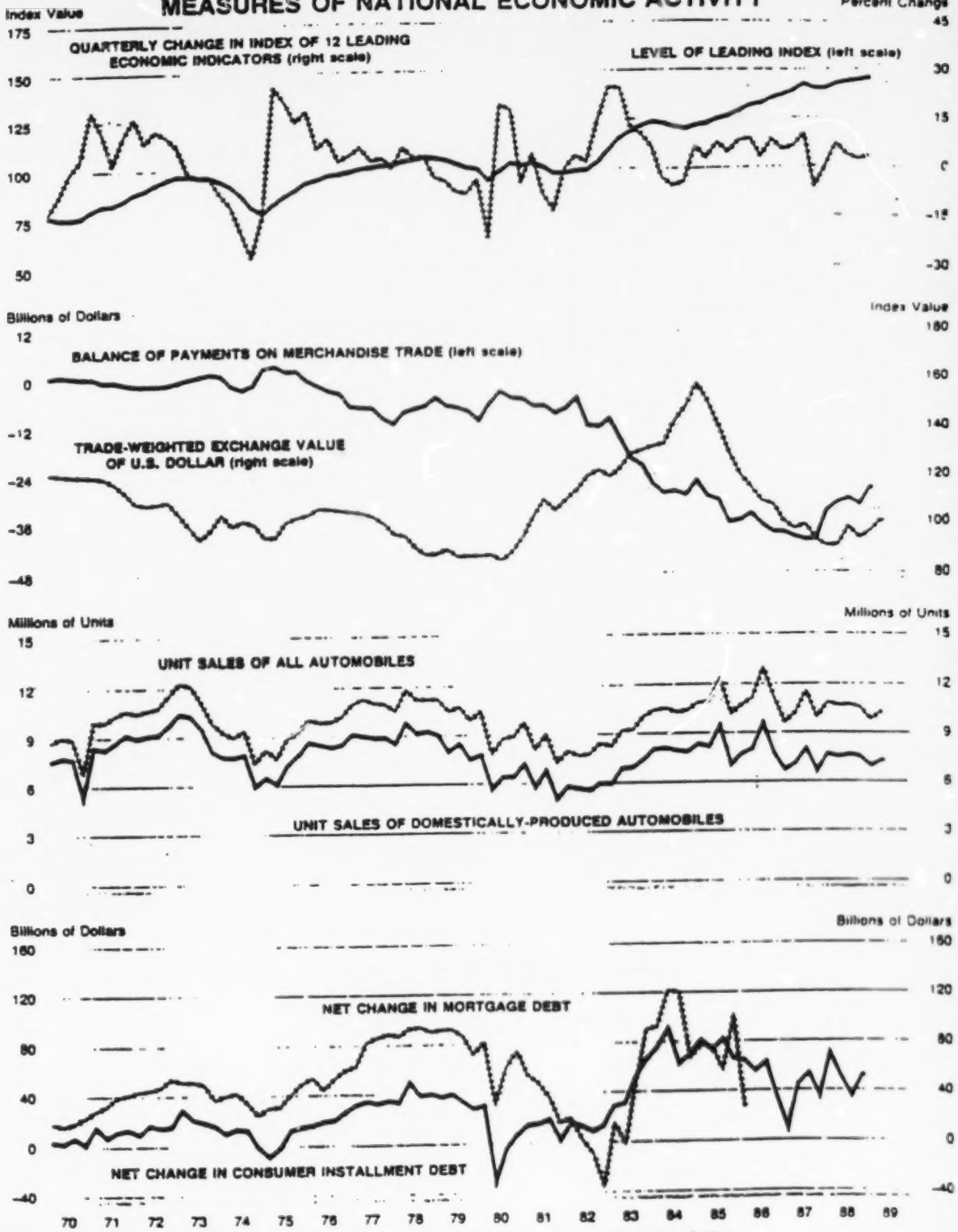
[1]Plus sign indicates net exports; minus sign, net imports.
[2]Preliminary.
Sources: U.N. Food and Agriculture Organization; U.S. Department of Agriculture, Foreign Agricultural Service.

MEASURES OF NATIONAL ECONOMIC ACTIVITY


Percent Change
Billions of 1982 Dollars
QUARTERLY CHANGE IN REAL GROSS NATIONAL PRODUCT (left scale)
LEVEL OF REAL GNP (right scale)
Percent
Percent Change
CIVILIAN UNEMPLOYMENT RATE (left scale)
QUARTERLY CHANGE IN OUTPUT PER PERSON-HOUR, NONFARM BUSINESS SECTOR (right scale)
Percent Change
Percent Change
QUARTERLY CHANGE IN CONSUMER PRICE INDEX
QUARTERLY CHANGE IN MONEY SUPPLY (M1)
Percent
Price Index
FEDERAL FUNDS RATE (left scale)
STANDARD & POOR'S INDEX OF 500 STOCK PRICES (right scale)
70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89

Note: Shaded areas indicate recession periods as designated by NBER; percent changes are at annual rates.

MEASURES OF NATIONAL ECONOMIC ACTIVITY



Note: Shaded areas indicate recession periods as designated by NBER; percent changes are at annual rates.

TECHNOLOGICAL

Robots with Human Intelligence

"I believe that robots with human intelligence will be common within 50 years," declares Hans Moravec in his new book *Mind Children: The Future of Robot and Human Intelligence*. Moreover, there is no reason to believe that human equivalence by these "children of our minds" represents any sort of upper bound, writes the director of the Mobile Robot Laboratory at Carnegie Mellon University.

At present, artificial-intelligence researchers find it relatively easy to make computers exhibit adult-level performance in solving problems on intelligence tests or playing checkers, but difficult or impossible to give them the skills of a one-year-old when it comes to perception and mobility, says Moravec.

Thus, the fastest progress toward fully intelligent machines is likely to come not from the "top-down" route to machine intelligence, which attempts to copy the conscious mental processes of human beings doing particular tasks, but rather from a "bottom-up" route that imitates the evolution of animal minds. Researchers are striving to add perceptual and motor capabilities to machines a few at a time, so that the resulting sequence of machine behaviors resembles the capabilities of animals with increasingly complex nervous systems.

"I am confident that this bottom-up route to artificial intelligence will one day meet the traditional top-down route more than half way, ready to provide the real-world competence and common-sense knowledge that has been so frustratingly elusive in reasoning programs," writes Moravec. Fully intelligent machines will result when the metaphorical golden spike is driven uniting the two efforts." He expects this union to occur in about 40 years.

A first-generation general-purpose robot, which may arrive before the turn of the century, will likely have stereoscopic vision, arms and hands for general manipulation, and locomoting legs with wheeled feet for mobility on rough ground and stairs. Software written for particular applications will enable the robot to do many useful tasks.

In the meantime, a general-purpose robot for the factory and for the home may arrive before the turn of the century. This robot will not be preprogrammed to do many useful tasks, but software written for particular applications will enable it to perform a wide variety of jobs, Moravec predicts.

For example, different software programs might allow the robot to clean bedrooms, assemble and cook gourmet meals from fresh ingredients, investigate bomb threats, deliver in and fetch from a warehoused inventory, or help to assemble and test other robots. Moravec forecasts that writing applications programs for successive generations of general-purpose robots will become the major human occupation in the early decades of the next century.

Programs will be created that make general-purpose robots good learners. They would be taught by leading them through the motions of the task, or by example. Eventually, integrated software packages may allow the robot to switch quickly and automatically from one task to another, making it a more autonomous mechanical servant.

In 30 years, the reasoning abilities of robots will be "astonishingly better" than ours. Moravec predicts, and their perceptual and motor abilities will probably be comparable to ours. The pace of innovation will quicken as "multitudes of economical machines are put to work as programmers and engineers, presented with the task of optimizing the software and hardware that makes them what they are." Successive generations of machines will thus become smarter and less expensive.

Moravec raises the question of, "What happens when ever-cheaper machines can replace humans in any situation? . . . Why rush headlong into an era of intelligent machines?" His answer is that "we have very little choice, if our culture is to remain viable. Societies and economies are surely as subject to competitive evolutionary pressures as are biological organisms. . . . If automation is more efficient than manual labor, organizations and societies that embrace it will be wealthier and better able to survive its difficult times."

Eventually, intelligent machines "could carry on our cultural evolution, including their own construction and increasingly rapid self-improvement, without us, and without the genes that built us," writes Moravec. "When that happens, our DNA will find itself out of a job, having lost the evolutionary race to a new kind of competitor."

Even in this "postbiological" future, however, human intelligence could not only survive, but thrive. Moravec believes that someday it will be possible to write computer programs that entirely model an individual human mind. Then, one's mind (in the form of a computer program) could actually be transferred to a mechanical body of the style, color, and material of one's choice. The death of the body would no longer mean the death of the mind.

Source: *Mind Children: The Future of Robot and Human Intelligence* by Hans Moravec. Harvard University Press, 1988. (Available from the Futurist Bookstore. See page 46 for details.)

A Bright Future for Photonics

Light-carrying glasses fibers will revolutionize telecommunications

Photonics — the gathering, transmitting, and processing of speech, data, pictures, and other information by means of light — has the potential to dramatically change telecommunications in the 1990s.

"Photonics is the second technology in our lifetime — semiconductor electronics is the first — to hold forth the promise of completely

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Hypergraphics: "The Classroom of the Future"

by JIM WILSON

The self-learning approach has been used for most of the practical research in, and applications of, computer-based training. That approach, which has been favored even for interactive video, entails a one-on-one interaction between student and computer. Thus it is not only capital-intensive (requiring one computer per student) but also demands that students be self-motivated enough to work on their own.

There is an alternative: Computer technology can be used within the existing classroom environment to support rather supplant the instructor. One such application of the technology is now being implemented in schools and corporate training facilities throughout the country. It is called Hypergraphics—The Classroom of the Future. Hypergraphics uses the capabilities of computer technology to implement the key features of effective classroom instruction. Thus, before we explore Hypergraphics in detail, we should briefly examine the key characteristics of classroom instruction.

What Works and What Doesn't

From time to time, we are all condemned to sit through interminable lectures that induce near-terminal boredom. During those torpid times, our minds wander and we acquire little from the presentation except mental numbness. Even with good lectures that use effective graphic overhead transparencies and other aids, our attentiveness drops after 20 minutes or so. We can all attest that time-efficient the lecture may be, but learning-effective it is not. All the same, because a lecture presentation allows the instructor to deliver a maximum of information in a minimum of time, lecturing is the predominant form of instruction.

True, a presentation may catch fire when the instructor jumps from the lecture groove and launches on a question-and-answer session, or opens the topic to classroom discussion. But the fire is easily dampened if a few students blanket the discussion or if many students sit back rather than take part in stoking the fire. Moreover, discussion or question-and-answer techniques take far more time to present and cover a given amount of information. The instructor must also have an expert's skill in moving the flow of information in the required direction and ensuring the participation of everyone.

We know from our experiences as both students and instructors that the key to any learning situation is a high level of audience attentiveness. To maximize attentiveness is to maximize how much is learnt and how much is retained. Ideally, that would be done in a way both inexpensive and quick.

We need visually interesting materials that are effective in presenting concepts, and also some way to keep each student actively learning. Additional factors that enhance student attention include smooth, well-organized presentations, and superlative questioning techniques.

All the factors mentioned can be supported by computer technology. Eye-catching graphics can be generated by computer and further enhanced by animation. Participation can be maximized by constantly getting the student to answer questions. A presentation can be exceptionally well-organized in terms of sequence and branching, and can come loaded and ready with precisely prepared questions, because the computer can be programmed beforehand. That is what the Hypergraphics system—its hardware and software—has been designed to do.

The Components

The hardware, illustrated in Figure 1, consists of a PC-compatible, an overhead projector with an LCD projection panel, an instructor's remote-control device, and provision for responses from each student.

The software assists the instructor in delivering the lesson material. The material is presented a step at a time, via the overhead projector. The instructor can move to any part of the material in any direction. In addition, the students are tested on the subject-matter

(continued on page 66)

Where are we headed? Are we ready?

Change is inevitable . . . but the future is very exciting

MARTHA MUSGROVE
EDITORIAL BOARD

INTO THE 21st CENTURY

The countdown has already begun toward the year 2000, now barely a decade away. Will the dawning of a new millennium bring more than a brief, historic sense of awe? Will people who've barely kept pace with change in the last 50 years stumble into the future? Or will they plan for it?

In a series of columns over the next few months, *Herald* Editorial Writer Martha Musgrove will share her vision of the future and what her reporting suggests needs to be done to smooth the way to the 21st Century.

Readers also are invited to share what they think is important to help Floridians to prepare for the 21st Century. Please address your letters to The Readers' Forum, 21st Century Project, The Herald, 1 Herald Plaza, Miami, FL 33132-1693, or FAX them to 305-376-8950.

FAST-FORWARD your imagination to the year 2025 and to these snippets of life in South Florida then:

● Teacher Jennifer Fergan of Howard Drive Elementary School in South Dade County is writing individual computer-instruction programs for the 14 students, ages 7 to 10, in her "blind level" class.

● A magnetic-levitation train whisks architect Alex Rivas from his Boca Raton home to downtown Miami. En route, Rivas slips a miniature cave rec. delivered to his home that morning, into a pocket-size player, leans back, puts on shades, and listens. His personalized cave report includes national news, sports news, and bid solicitations for South Flor- construction contracts.

● West Palm Beach retirees Billy and Beth Thomas phone their granddaughter in North Carolina and by holograph join the birthday party of their 6-year-old grandson, Brian.

● Medical writer Seth Kaplan is writing a three-part series on Florida laboratories' use of genetically engineered bacteria to manufacture hormones and enzymes useful in treating cancer and heart disease. He writes in English on a computer that translates his words into French, Spanish, Russian, and Japanese.

Fantasies? No. The 21st Century — a century of commercial space travel, holographic telephones, cancer cures, household robots, transgenic animals, solar energy — is nigh, just one decade — 10 scant years — away.

Are we ready? What has to be done to move South Florida confidently into the 21st Century? What attitudes need to be changed? Skills acquired? What laws must be passed? Repealed? What economic policies have to be in place?

The people who will mold at least half of the 21st Century are already here or are about to be. They are toddlers like Alex, or high-school students like Jennifer and Seth. Are our schools teaching them the attitudes and skills that they will need in order to cope? To lead? What about the rest of us? Will we coast into the 21st Century? Fret at the new, cling to the old?

No one wants to be held hostage in a new century by the bad decisions of this one. But what unresolved issues will we carry into the new century? What new issues — defined today only by a gleam in a scientist's eye and the ambition or vision of politicians and bankers — will emerge? If some of us are barely coping with today, how do we prepare for a new era? An era of change more rapid than the ones we've survived?

Over the next few months, I'll share with you my reporting on these questions. Then we can, together, analyze the challenges and plot a new course to move Florida into the 21st Century with confidence.

The 19th Century ended with soul-searching over women's rights, industrial exploitation, colonialism, rising nationalism, yellow journalism, and growing class distinctions. Aspects of these phenomena endure as issues to this day.

Yet who in 1900 could predict nanosecond global communications, the atom bomb, space exploration, the pill, computers, silicon chips storing entire libraries in the space of a fingernail? Who could foresee the conquest of smallpox — or the deadly deadly plagues of AIDS? Who could envision communism sweeping much of the world and then, after 70 years, virtually disintegrating within months?

Professional futurists insist one common flag of caution: People tend to project, or plan, the future as a gradually rising line. In fact, futurists say, change may often occur exponentially, in very steep gradients. Inventing the computer took longer than miniaturizing its components, doubling and redoubling its storage capacity and increasing speed. The rate of long-term change is always underestimated.

Succeeding columns presume that the arms race will be brought under control so that nuclear war will not blow us all asunder. If that assumption is wrong? Well, the 21st Century will be short-lived and the 20th Century will seem far more benign than those who lived through it now believe.

Martha L. Musgrove was born in 19[illegible] in Orlando and grew up in Gainesville, and Atlanta, Ga. Upon graduating w[illegible] BSJ and MSJ degrees from Northwestern University, she joined The Miami Herald in 1965. She also has worked for The Atlanta Journal, served as editor of The Palm Beach Daily News and Palm Beach Life magazine, and was Florida capitol-bureau chief, political editor, and editorial writer for The Palm Beach Post. She joined The Herald's Editorial Board in 1983, specializing in environmental, agricultural, and growth-management issues. She and her husband have t[illegible] children.

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POLITICAL

February 7, 1990 • A2
Volume XXXVI, Number 21

THE BUSH BUDGET

President's Proposal Would Cut Aid to Students, Boost Science Spending

Some 300,000 students would have their federal aid slashed in the 1991-92 academic year under President Bush's new budget proposal, which he sent to Congress last week.

The proposed cuts are part of a $24.6-billion Education Department budget that includes a 2-per-cent increase over the fiscal 1990 total.

Most science and technology programs would fare well. Spending on basic research would rise by about 8 per cent.

Stories on the budget: Pages A24 through A34.

- **Fewer students would get** State Student Incentive Grants and Perkins Student Loans, and some college officials fear that fewer would receive Pell Grants. One of the largest increases would go to programs that help institutions recruit and retain disadvantaged students. Page A24.

- **Proposed increases for science** and technology could be scaled back in the budget fight ahead, Congressional aides warned. As part of the increase for basic research, military spending would rise by about 6 per cent and civilian spending by about 9 per cent. The Administration also recommended a 57-per-cent increase in support for global-change research. Pages A24 and A33.

- **Scholarship in the arts and humanities** would get small but potentially significant increases. Advocates of federal support of such scholarship said the increases could signal a shift away from attitudes of the Reagan Administration toward the arts and humanities endowments. Page A30.

- **Two proposed changes in the tax code** could help higher education. One would make permanent a tax credit for corporate spending on research. The other would create tax-free savings accounts that could help some parents save for their children's college education. Page A30.

- **Special, discounted mailing rates** for non-profit groups would be curtailed. College alumni associations were dismayed by the proposal, which would exclude from discounts any third-class mailings that did not "relate directly" to the primary purpose of an organization. Page A29.

- **Federal dollars support** a wide variety of college programs—from humanities courses for ethnically diverse students to an extension service that is as likely to help communities cope with AIDS as with crop failures. Reports from six campuses begin on Page A25.

INSIGHT

Ocala Star-Banner
4/16/90

Doctor links pollution to Down syndrome

By Keith Schneider
The New York Times

PAMPA, Tex. — An unusual number of Down syndrome births in this industrious little city has propelled an investigation of pollution and set up the country's first legal test of an emerging medical theory that toxic chemicals could cause the birth defect.

The Texas Department of Health and the Federal Centers for Disease Control reported four years ago that the rate of Down syndrome children born to young women here was "significantly more than expected."

The investigators could not identify a cause.

Separately, a lawyer suing a Hoechst Celanese chemical plant where a 1987 explosion killed three workers and injured 37 others has uncovered evidence that the plant for years spewed toxics into the air and contaminated the region's principal source of drinking water.

This month, in a report supporting the lawsuit, a prominent pediatrician in the region linked the two sets of findings.

The report said that "in all medical probability," the number of Down syndrome cases "is related to the environmental pollutants from the Celanese site."

But Brent C. Stephens, the plant manager, said experts hired by Hoechst Celanese have considered the reports and rejected the conclusions that the pollution was a factor in any health problems.

Stephens said there was no scientific evidence supporting the assertions that illnesses and birth defects were caused by the enormous plant, which was rebuilt and reopened almost a year ago.

And other specialists say the theory linking pollutants to Down syndrome, which affects mental and physical development, is little more than speculation.

"There is nothing in the published literature that supports this contention," said Dr. Philip Guzelian, the head of clinical toxicology and environmental medicine at the Medical College of Virginia in Richmond.

"It is pretty clear there is no evidence for any environmental cause for Down syndrome," he said.

But even strong doubts have not swayed the pediatrician making the allegation.

That doctor, Gerald H. Holman, a former associate dean of the Texas Tech Medical School in Amarillo, 55 miles west of Pampa, cited experts in the United States and Canada who have developed new theories about the causes of Down syndrome, which occurs when a genetic accident results in three copies of a particular chromosome.

Holman said in an interview this week that the biochemical reactions that guide the development of genetic material in the sperm and egg before and immediately after conception could be disrupted by toxic pollutants and result in Down syndrome.

Holman also noted that laboratory tests in which animal cells are exposed to toxic chemicals have produced genetic changes similar to those in Down syndrome.

Pampa, a city of 20,000 spread across ground so flat and open it looks like a calm ocean, seems an unlikely place for such a complex legal and scientific dispute.

Since it was founded at the turn of the century, Pampa has steadily provided America with the bounty of its fields and factories: wheat and beef, gasoline and gun barrels and an array of industrial chemicals.

The right's on a roll around the world

by MICHAEL BARONE and DAVID R. GERGEN

Only a few months ago, parties of the left were riding a crest of popular support toward election victories around the world. But suddenly their wave has crashed, and it now appears that parties of the center right have a good chance for continued dominance of politics for the rest of the century. The results are helpful to American security and economic interests.

In Brazil, a leftist challenge lost momentum in the closing weeks of the campaign, and the candidate of business, Fernando Collor, was elected President in December, 1989. In Japan, the Socialists seemed ready to end the Liberal Democratic Party's 40-year reign, but fielded so few candidates that the LDP rebounded. In West Germany, analysts thought a red-green coalition (the Greens and Socialist parties) could dislodge Helmut Kohl's center-right coalition this fall, but the odds are now shifting toward Kohl. Even in Nicaragua, the more conservative candidate, Violeta Chamorro, has a decent chance of winning against the Sandinistas.

These successes build on the victories of the center right that began a dozen years ago in North America and Western Europe, and now the trend is spreading to East Asia, Latin America and perhaps this year to Eastern Europe. And they refute the received wisdom of generations of Marxists, American Progressives and even conservative theorists. New Deal historians like Arthur Schlesinger, Jr., preached that history is marching inexorably to the left, toward larger government and more international cooperation, while New Deal critics like Friedrich von Hayek feared the West was on "the road to serfdom."

Right on. *Reagan helped trend start*

For a time, the left was ascendant. Beginning in 1960, liberal parties replaced even successful parties of the right: Democrats in the U.S. in 1960, Labor in Britain in 1964, Trudeau Liberals in Canada in 1968, the *Apertura a sinistra* in Italy in the 1970s and the French Socialists belatedly in 1981. Their victories were in part a demographic dividend: Poor people of the 1930s and 1940s had more children than rich families, and the grown-up children of the Depression and the war tended to vote left.

But left parties didn't do very well in office, allowing government to grow too large at home, national power to flag abroad, their links with traditional cultural values to atrophy and inflation to take root. On a larger world scale, points out political analyst Richard Scammon, "Marxist Leninism became the God that failed." Nations have not abandoned the welfare state, but they now embrace the center. Thatcher launched the counterrevolution in 1979, followed by Ronald Reagan in 1980, Kohl in 1982 and Canada's Brian Mulroney in 1984. Socialist leaders, starting in France and now in Spain, Italy, Australia and New Zealand, have been privatizing state enterprises and praising market economics—and winning elections. Even Britain's Labor Party is moving right and has a big poll lead for the first time in a decade.

For the U.S. and President George Bush, the dominance of center-right parties provides a congenial climate for cautiously working out new security arrangements with the Soviet Union in Europe and in Asia. Economically, Bush confidants are thrilled that so many countries are embracing lower taxes, privatization of industry and a greater commitment to market forces. Some 55 nations have cut taxes since 1985, including Sweden. On a recent European trip, President Salinas of Mexico was hailed as the Thatcher of Latin America for selling off government enterprises and arresting corrupt labor leaders. In Eastern Europe, newly emerging leaders look to Scandinavian and West German Social Democrats for models. But even those models are being challenged from the right. For instance, Sweden's Socialist government fell last week after being in power 51 of 57 years; Solidarity's program for Poland is tough and austere, and the new Czechoslovak Finance Minister admits teaching young economists the theories of free-market purist von Hayek. □

Throw the bums out

Conservative direct-mail entrepreneurs, deprived of many old causes, have found a new issue to bring in the bucks: A proposal to limit terms of members of Congress. Unable to dent Democratic majorities in elections, some conservatives, joined by a few liberals who feel incumbents are out of touch, are leading a drive for a constitutional amendment limiting service in each house to 12 years.

The idea has widespread appeal, and referendums limiting legislators' terms are going on the ballot in California and Oklahoma. But the term limit, like so many reforms, may have unintended consequences. The 22nd Amendment, passed to bar a third term for a future Franklin Roosevelt, has made lame ducks only of Republican Presidents. By the time a 12-year limit is likely to go into effect, in 2002, its first major casualty may be not a Democrat but a Republican, Speaker Newt Gingrich, if his party makes the gains he seeks in the 1990s. □

Sunny-side politics

The era of negative political ads could be fading. So far this year, the TV spots that have dramatically moved votes in two of the biggest gubernatorial races are entirely positive. In California, Democrat Dianne Feinstein's 30-second spot, showing her taking office as mayor of San Francisco after her predecessor was murdered in 1978 and mentioning her pro-choice, pro-capital-punishment stands, has boosted her support in polls from the low 30s to the mid-40s. In Texas, Republican Clayton Williams's spots, mentioning his business experience, his education stands and his promise to introduce drug offenders to "the joys of bustin' rocks," raised him from zero to a big primary lead. The lesson: In these rather positive times, positive messages can work. ■

The Secure Way to Cut the Military

By STEVEN L. CANBY

As President Gorbachev dismantles the "evil empire," American defense spending is increasing. The military budget is to increase steadily to $311 billion, in current dollars, by 1995 — $39 billion above present spending levels. The Bush Administration justifies these rising military costs by the possibility of a resurgent Soviet Union, enduring third-world threats and the continuing technological revolution in weaponry. New defense planning calls for high technology weapons that can exert leverage against the Soviet Union and other adversaries. The United States can no longer afford this approach to security.

Fortunately, there are ways to cut American and European military budgets while increasing Western security. But the way to do it is not by withdrawing American troops and air forces from Europe, as some people have proposed, but by using human, material and scientific resources more efficiently.

Many Americans fail to recognize that American air and ground forces stationed in Europe are relatively inexpensive — they account for less than 10 percent of the overall military budget. The 50 percent of the military budget normally associated with America's commitment to NATO is primarily intended for reinforcing these troops in Europe during a protracted conflict.

The expense of reinforcing American and Allied troops in Europe during a long conflict is now a luxury, but stationing American troops overseas is not. The reduced Soviet threat and the cordon sanitaire formed by a partially demilitarized Eastern Europe, gives the Western Europeans increased warning time to mobilize their own forces in case of attack. The United States should act to cover Western European forces with its own divisions in the event of a threat. But it is now anachronistic for Americans to defend Europe against a conventional Soviet attack by mobilizing soldiers based in the United States and shipping them across a submarine-infested Atlantic Ocean.

If Western Europe would mobilize its own forces, there would be a balance in Europe and no need for American reinforcements. European militaries already train the required numbers of conscripts, but they have never organized them into units suitable for rapid mobilization and front-line duty. This requires additional experienced personnel and materiel. These resources are available by reducing the size of Continental navies and air forces. Moving American air forces

Rearranging roles and missions within NATO could save the U.S. $40 billion a year.

and aircraft from their positions in the third world would compensate for reducing the size of Europe's forces.

Continuing military research and development spending is perhaps the single most important question facing this Administration. The United States allocates a third of its total scientific effort to the military. There is little commercial spin-off. Only 15 percent of the Pentagon's research spending is for basic research; most is for engineering development. Shifting research and development resources back to the civilian sector is imperative if the United States really wants to redress the trade deficit and declining productivity. The United States devotes 30 times more to military research than Japan and 5 times more than Germany, as a percentage of gross national product. This has shifted resources away from the civilian sector and is one reason why American products must compete on price, not quality, in international markets.

The Pentagon's addiction to high technology, irrespective of tactics, is dangerous. Military advantages conferred by technology are transitory against an adaptable opponent, and innovation is more expensive than imitation. The West's widely trumpeted technological advantages have never offset NATO's numerical inferiority.

Neither military nor civilian strategists in the Pentagon recognize the meaning of high technology weaponry. Tactically ignorant technical solutions simply turn conventional warfare into an exchange of firepower — a sure loss strategy for the side with inferior numbers. Only recently has the United States military tried to emphasize the importance of maneuver, and its procurements have yet to reflect this change.

American military spending can and should be cut. Excessive military research and development must be slashed. But the United States should retain substantial air and ground forces overseas. This apparent inconsistency requires structural changes in military organization and a rearranging of roles and missions within NATO. As much as $80 billion annually could be saved in personnel and operations without cutting any forces and substantially increasing readiness by organizing personnel and mobilization differently. Rearranging roles and missions within NATO to take advantage of each nation's comparative advantages could save the United States an additional $40 billion a year. Cutting research and development by half could save $20 billion. Smaller budgets need not mean weaker forces.

Now is the time for the Administration to take its own bold steps to match its strategy and tactics to the changes in Europe and the Soviet Union. The West can be more secure and the United States can prosper in the process. ■

Steven L. Canby is an economist and military strategist. He is a former Army infantry officer.

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Appendix C

Lookouts: Newsletter Of Environmental Scanning Of The Georgia Center For Continuing Education

LOOKOUTS

Vol. 6 No. 1 JANUARY, 1991 Editor: Donna McGinty

ANNOTATED CONTENTS

The Georgia Center's environmental scanning program is a component of strategic planning. Some sixty "scanners" represent top management and staff of the four operational divisions. All actively scan various sources of current information (publications, media, conferences, expert opinion) and identify threats to and opportunities for Georgia Center operations. Scanners submit scanning finds in writing to the Director and attend, as primary duties permit, data-analysis meetings. Environmental scanning was inaugurated on September 1, 1985. (To volunteer as a scanner, please contact Donna McGinty, Director's Office.)

Pages

- TOP STRATEGIC CONCERNS (November, 1990) 2-4

Twice a year, two committees review and analyze scanning input. The Evaluation Committee (EC) is comprised of all Georgia Center scanners who are not assigned to serve on the Strategic Planning Executive Committee (SPEC). The EC is advisory; SPEC develops policy and takes action. Analysis by these two committees is a vital "check and balance" for strategic planning. Using a MacIntosh HyperCard program developed by the Center (called HyperVote), scanners vote independently to select issues to be discussed. Committees will meet again in June, 1991.

- PROGRAMMING SUGGESTIONS 5-9

Ideas for continuing education programs come from several sources, including client groups, faculty, and staff. Environmental scanning is another rich source of ideas. This section contains ten programming possibilities. Others may be found in the "Top Concerns" and "Monitor" sections of this newsletter.

- MONITOR (Trends, issues, and events revisited) 10-15

Scanners routinely monitor major trends, issues, and events, many of which have surfaced previously as Georgia Center top strategic concerns. Staying abreast of political, economic, technological, and social changes allows timely adjustment of the strategic plan.

- SCANNING ACKNOWLEDGEMENTS 15

- UPDATE: WHAT DIFFERENCE HAS ENVIRONMENTAL SCANNING MADE? 16

Interesting things have happened and will continue to happen as a result of being systematically sensitive to the external environment.

The newsletter of the ENVIRONMENTAL SCANNING PROJECT of the
Georgia Center for Continuing Education, The University of Georgia, Athens, Georgia 30602

TOP STRATEGIC CONCERNS IDENTIFIED AND DISCUSSED
BY THE
EVALUATION COMMITTEE AND THE STRATEGIC PLANNING EXECUTIVE COMMITTEE
November, 1990

• **IN A CONTROVERSIAL DEVELOPMENT, TWO OF SIX REGIONAL ACCREDITING AGENCIES FOR HIGHER EDUCATION NOW WITHHOLD APPROVAL IF INSTITUTIONAL GOALS FOR PROMOTING AND MAINTAINING ETHNIC AND RACIAL DIVERSITY ARE NOT MET.** Even if the Southern Association of Colleges and Schools (SACS) does not follow suit, swift and steady diversification of our society demands that higher education diversify its faculty, staff, and students.

Thumbnail Summary of Abstracts. Until recently, the six regional accrediting agencies considered issues of diversity in evaluations but would not withhold approval if diversity-goals were not met. Now, the Middle States Association of Colleges and Schools and the Western Association of Schools and Colleges include in their accrediting standards institutional effectiveness in recruiting and retaining minority faculty and students. Critics feel it means hiring and admission quotas. A SACS representative expressed "reservations about the use of accrediting process to achieve those kinds of social goals." In a counter argument, the president of the Carnegie Foundation stated that "...the direction that Middle States is moving is precisely where regional bodies have to go if there's to be an authentic connection between the essential principles of higher education and the processes of accreditation and evaluation." **(Chronicle of Higher Education) (McGinty 1063)** In his latest book, **The Conscience of the Campus**, Derek Bok of Harvard concludes that the academy falls short in strengthening "Americans' ethical awareness and sense of social responsibility." On the positive side, he feels "that college campuses are quite possibly the most diverse communities in the United States, and that many are making concerted efforts...to respect and enhance the pluralism of American culture." **(New York Times Book Review) (Chandler 1055)**

• **THE KEY TO MANAGING WORKFORCE 2000 LIES IN MANAGING DIVERSITY AT A TIME WHEN RACISM SEEMS ON THE RISE AND GOOD-OLD-BOYISM REMAINS ENTRENCHED. BUSINESS IS HEAVILY INTO DIVERSITY-TRAINING FOR MANAGERS AND MOVING-UP-TRAINING FOR WOMEN AND MINORITIES.** Although resources are currently tight, should the Center commit to diversity-training for its supervisors and managers?

Thumbnail Sketch of Abstracts: Corporate America is beginning to realize that successful management of diversity means moving "past hiring goals and tokenism." Some companies are doing sensitivity training, others are into mentoring, "matching new hires with veteran employees, often of the same gender or ethnic group. ...Most diversity experts stress that what passes for 'corporate culture' is really white, male culture." Many women and minorities do not know how to play by rules that value action over deliberation; reason over intuition; and leading over asking. **(Newsweek) (Chandler 1053)** Georgia is one of five states that will account for half of the growth in the nation's black population between 1988 and 2000. By 2000, the USA will have added 7.9 million blacks between the ages of 5 and 17. In 2000, Georgia's black population will be 2.2 million. **(Higher Education & National Affairs) (McGinty 706)** "The greatest discrimination problems will

be faced by black Americans. In fact, native born blacks may face even more discrimination than blacks from Africa and the West Indies." (Executive Book Summaries) (McGinty 1092) Racism among white college students appears to be generating new biases regarding blacks. In the 1980s, an Arizona State University researcher asked a random sample of white students to choose among a list of 84 personality traits, both positive and negative, those traits that applied to blacks. The results were compared to data obtained in the 1930s and 1960s. Unfortunately, new stereotypes of blacks have emerged among the top 10 traits, including "loud, aggressive, and sly." (USA Today) (McGinty 1093)

- **THE RESEARCH-AT-THE-EXPENSE-OF-TEACHING DEBATE HAS NOW WIDENED TO INCLUDE CRITICISM OF PUBLIC SERVICE AS A RESOURCE DRAIN. Government leaders continue to be disgruntled with higher education; this doesn't help when scarce funds are being allocated.** If a Georgia "Grace Commission" recommends cuts in funding for higher education service programs, how vulnerable is the Georgia Center?

  Thumbnail Summary of Abstracts. "The tension between research and teaching in universities goes back almost as far as the American research university itself. But that tension has been higher than usual lately, what with cost-cutting pressures on campus and increasingly sharp scrutiny by outsiders on the quality of undergraduate learning...." (Washington Post Editorial reprinted in The Green Sheet Circular) (Simpson 1049) At the 1990 annual meeting of the Education Commission of the States, where higher ed bashing seemed in vogue, Governor Caruthers of New Mexico received warm applause when he said: "If colleges continue to emphasize research and service, the taxpayer, one of these days, is going to ask, 'Why are we paying these people?'" (Chronicle of Higher Education) (McGinty 1074) Georgia candidates for governor, Miller and Isakson, have committed to appoint a Grace Commission to recommend ways to run state government more effectively and efficiently. This editorial singles out the University System as a good place to start. Such a Commission "should examine the services, such as the Cooperative Extension Service, and various other institutes...to determine whether they're really worth the public investment." (Atlanta Journal Editorial) (McGinty 1066) The rate of increase in state support for higher education has dropped to a 30-year low. Since 1958, the two-year increase has never been as low as the 11.6 percent increase scheduled for 1990-91. (Chronicle of Higher Education) (Parker 1089)

- **ALL OF THE FOLLOWING THINGS ARE HAPPENING AT ONCE:**
  --UGA'S enrollment is booming while colleges are hanging out vacancy signs;
  --The number of GED diplomas earned has declined sharply;
  --The percentage of high school students entering college is up;
  --College enrollment of older students is up in numbers but not in the percentage of the population attending higher ed;
  --The number of college graduates in the American workforce outstrips the demand for their skills;
  --Corporate America is increasingly giving what used to be high-school-level jobs to college graduates;
  --And the standard of living of high school graduates fell in the 1980s for the first time since World War II.

The above trends will shape the student/client pool for the Center currently and in the future, both for credit and non-credit programs. It is not enough to react to each independently. What are the strategic patterns for continuing education?

Thumbnail Summary of Abstracts. Changing demographic patterns in the U.S. have resulted in a steady decrease in the number of college students of traditional age (18-24). Some experts suggest the "problem" should be redefined as a problem of populations historically under-represented on college campuses, i.e., blacks, Hispanics and poor whites. (Christian Science Monitor) (Conover 1088) Traditionally, about 50 percent of college graduates went on to college. Since 1982 the percentage of high school grads enrolling in college has jumped to 59 percent. All this when the number of college graduates in the workforce "outstrip the demand for their skills." Yet, corporate America hires more and more college graduates for jobs that used to be given to high school grads. It's increasingly a way to by-pass hiring the public school graduate, too often found underprepared or even illiterate. Is it any wonder the standard of living of the high school graduate dropped in the 1980s for the first time since World War II? (NY Times article in Atlanta Journal & Constitution) (McGinty 1125) The number of students age 25+ enrolled in higher education rose by nearly 2 million between 1974 and 1989, an increase of 59 percent. "However, the enrollment rate of these age groups--that is, the percentage of the population enrolled in higher education--has varied only slightly over the years. ...The increase in persons over the age of 24 in the student population appears to be due more to growth in the population base than to changes in participation rates in that population." (Higher Education & National Affairs) (Simpson 1116) From 1980-89, there was a 25 percent drop in the number of GED diplomas earned (500,203 in 1980; 376,879 in 1989). GED graduates make up 5 percent of each year's college entering class, or about 120,000 students per year. The director of the GED Testing Service sees this as a trend. (Higher Education & National Affairs) (McGinty 1124)

- **SCANNERS CONTINUALLY SUBMIT ARTICLES RELATED TO THE SAFE USE OF COMPUTERS. FIRST AND FOREMOST, THERE IS THE NUMBER ONE HEALTH CONCERN OF WOMEN: CAN THE ELECTROMAGNETIC FIELD EMISSIONS OF VDTs (videodisplay terminals) CAUSE MISCARRIAGES AND BIRTH DEFECTS? Other computer-related problems include eyestrain, development of carpal tunnel syndrome, and muscle injuries.**

Thumbnail Summary of Abstracts. In this round of scanning, the following articles were submitted:

--Magnetic-field menace (MacWorld) (DiGeorgia & Prichard 1129)
--Hazards of electromagnetic fields (Prichard & DiGeorgia 1130)
--Computer waves (U.S. News & World Report) (Prichard & DiGeorgio/1131; Shehane 1123)
--Are VDT's safe? (Information Week) (Prichard & DiGeorgio 1132)
--The friends that may also be foes (Financial Times) (Prichard & DiGeorgio 1133)
--Evidence suggests VDTs pose hazard (NEA News Focus) (Prichard & DiGeorgio 1134)

PROGRAMMING IDEAS
from the
NOVEMBER, 1990 ANALYSIS ROUND
Georgia Center Environmental Scanning Program

Introductory Thought: Ron Gross has dubbed informal education, people learning together outside of formal structures, as "the Invisible University." He feels that the four required courses that we are all studying together are:

- **Safe sex (a practicum)**
- **Deficit financing of the American economy (intermediate)**
- **Lessons of Communism's collapse (beginning)**
- **Global economy (choice of levels)**

(Adult & Continuing Education Today) (Lawson 1054)

To these, the Georgia Center scanner suggested adding a fifth:

- Recovery (from drugs, alcohol, AIDS, gambling, etc.)

(American Health) (Lawson)

Obviously, major learning-issues in the Invisible University are found in continuing education programs around the country. Related and other program possibilities include the following:

1. **THE AVERAGE AMERICAN LACKS A WELL-GROUNDED GLOBAL PERSPECTIVE. CONTINUING EDUCATION NEEDS TO RISE TO THE CHALLENGE.** As a percentage of GNP, four of the following eight countries spend more on the military than on education: USA, Canada, the United Kingdom, Sweden, Soviet Union, China, South Africa, and Iraq. Which ones? They are the USA, Soviet Union, China, and Iraq. This may not be a surprise, but look at a sampling of countries that outdo the USA's 5.3% percent of GNP in educational expenditures: Saudi Arabia (10.6%), Botswana (9.1%), Zimbabwe (7.9%), Sweden (7.6%), Canada (7.4%), Israel (7.3%). **(World Monitor) (Brewer 1107)** Americans are slow, or perhaps just reluctant, to comprehend the implications of global interdependence which is progressing at a dizzying speed with the help of technology. Among other things, Americans must "devise problem-solving strategies that can be applied day after day;" must give up winner-loser thinking in favor of "we" thinking; must become more involved in foreign policy; and must act on the knowledge that the same technological advances that have made the world interdependent can take the smallest town international. **(World Monitor) (Brewer 1102)** The Persian Gulf crisis has brought back for public scrutiny the failure of the U.S. to develop a coherent energy policy. The oil price shocks of 1973 and 1979 "forged a national consensus to reduce U.S. dependence on foreign oil...and fossil fuels...." Unfortunately, the consensus dissolved during the Reagan years of free-market decisions, during which oil dropped from over $35 per barrel in 1981 to $15 per barrel in 1986. **(Dollars and Sense) (Brewer 1105)** "The Era of Oil--conventionally produced oil--may end during the life time of children born since 1985," according to James Critchfield. Techniques of enhanced oil recover (EOR), although expensive, will buy the U.S. time to make long overdue changes in energy sources, and consumption. **(World Monitor) (Brewer 1101)**

2. **ENVIRONMENTAL EDUCATION OPPORTUNITIES ABOUND AND ARE NEEDED.** Although it doesn't have to be, corporations, research groups, and government are usually at the forefront of public environmental education. Although generally slow to respond, adult educators should pursue certain responsibilities: to point out

current and future dangers, to teach behavior modification, and to advocate "an ethic of satisfaction," not greed disguised as development. The adult educator is caught between the traditional ethos of progress and awareness of impending environmental disasters. "Although educators may feel left out of the political action, their role is to enable others to call for action, and to make their own decisions. It is far more effective if wide sections of the population make political demands, to which politicians will eventually listen, than if teachers seem to be teaching their governments, on the basis of conviction rather than exact data." **(Convergence) (McLaurin 1085)** There are over 60,000 different chemicals found in the workplace. Federal legislation has given workers the right to information about possible chemical dangers. However, the 1986 Emergency Planning and Community Right-To-Know Act also assured members of the community access to information about potential chemical hazards. It is in this area, informing the general population, that continuing educators could make an impact. **(Journal of Extension) (McLaurin 1087)** Currently, Americans produce about 160 million tons of refuse a year; this will rise to 193 million tons by 2000 if nothing is done. "This growing effluence of affluence, 3 1/2 pounds a day for every American and rising, is a byproduct of our consumer society... And it has become a major national environmental issue, forcing citizens, elected officials and private companies to give serious thought to rubbish." **(U.S. News & World Report) (Fabris 1060)** This intriguing article, entitled "The Liberal Arts, the Campus, and the Biosphere," challenges higher education "to lead in the transition to a sustainable future." The author "offers a rationale for incorporating environmental concerns into the curricula of higher education and suggests examples of curricular innovations, including programs for restructuring the ways colleges procure food, deal with waste, and use energy." **(Harvard Educational Review) (Brewer 1104)**

3. **FUTURES ORIENTED PUBLICATIONS OFFER RICH POSSIBILITIES FOR CONTINUING EDUCATION PROGRAMS.** The United Way of America's Strategic Institute has identified 100+ trends in society and categorized them under nine major "changedrivers" to the 1990s. In this article, the social, economic, political, and technological forecasts for each changedriver are discussed briefly. The nine changedrivers that are reshaping America are:

- The maturation of America
- The Mosaic Society
- Redefinition of individual and society roles
- The information-based economy
- Globalization
- Personal and environmental health
- Economic restructuring
- Family and home redefined
- Rebirth of social activities

The least familiar of these trends may be the "Mosaic society." The term encompasses a number of diversity-related trends (ethnic, elderly, single-person households, etc.), that are moving America away from the designation "mass society." The mosaic is not static, however; rather, compare it to ever changing kaleidoscopic images. **(The Futurist) (Prichard 1068 and Brewer 1103)** This article rounds up forecasts made in **The Futurist** magazine during 1990. As noted in the introduction, "Opinions differ on such issues as environmental damage and health trends, and some of the forecasts may seem contradictory. In all cases, though, the forecasts were chosen because they provide throught-provoking ideas about the

future. For example, put these two forecasts under your thinking cap: (1) Robots with human intelligence will be common within 50 years. (2) "Electronic immigrants" will be the new global workers of the future, recruited and trained to perform work by telecommuting over great distances. **(The Futurist) (Prichard 1071)** SUGGESTION: A CONFERENCE TO SHOWCASE THE VIEWS OF FUTURISTS

4. **"ARE AMERICAN UNIVERSITIES DOING ENOUGH TO HELP THE UNITED STATES CONFRONT ITS DOMESTIC CRISES, LIKE DECLINING PRODUCTIVITY, INTRACTABLE POVERTY AND RISING RATES OF ILLITERACY?"** This is the first of two questions posed by Derek Bok in a new book. The second question: "And is the academy doing all that it can to strengthen Americans' ethical awareness and sense of social responsibility?" To both questions, he answers no. The research university can and should address the first question. Furthermore, the academy must begin "fostering students' moral development and sense of social responsibility through courses in applied ethics, programs of community service, clear codes of conduct and high ethical standards for university decision making." **(New York Times Book Review) (Chandler 1055)**

5. **RESEARCH INDICATES (A) SELF-CONFIDENCE COURSES MAY BE NEEDED BY WOMEN GRADUATES OF COEDUCATIONAL COLLEGES, AND (2) THAT MALE INSTRUCTORS IN CONTINUING EDUCATION MAY BE PERPETUATING SELF-DOUBT AMONG FEMALES.** "A fairly large body of evidence now indicates that women learn more, learn faster and emerge more confident at women's colleges than at coed colleges." A study of high school male and female valedictorians shows a more or less equal confidence in intellectual capacity. However, this confidence is seriously eroded in females by the second year of college, at which point 22 percent of males and 4 percent of females still considered themselves intellectually superior to their classmates. "One thing that shows up in almost every study is the finding that male students talk more in class and command more attention from teachers." The more aggressive, interruptive classroom style of males tends "to eclipse the more orderly and less aggressive style of females. ...Still the fact is that when male behavior sets the tone for female learning, females tend to lose out." **(U.S. News & World Report) (Lawson 1052)**

6. **TO ENCOURAGE CHANGE AND INNOVATION AND TO IMPROVE STRATEGIC PLANNING, MANAGEMENT TRAINING SHOULD FREE PEOPLE UP TO USE CREATIVE THINKING AND INTUITION.** Warren Bennis believes that resistance to change tends to worsen during tough economic times. Even in good times there is a gap between management theory and practice, too much "lip service" paid to empowering people to be responsive and creative without enough follow-up. Companies must create a culture that tolerates failure because solid progress comes via people who will take risks. Cut-off creativity and you'll fail to meet changing market conditions. "What we need," Bennis says, "is more maestro and less macho." **(Atlanta Journal) (Brooks 1139)** Suddenly, companies want employees to think for themselves. This "calls for enormous change at firms where imagination was once considered as a subversive trait." Creative problem solving is now a high priority with managers. A Corning executive says, "By the mid-1990s we'll define good management as the ability to get out of the way." Failure must be valued as an avenue for advancement. **(Time) (Dowdle-Head 1140)** Creativity has attained unprecedented status in today's board rooms, accepted as the way to meet economic competition, deal with rapid changes in technology, and boost worker productivity. The creativity movement is defining a new management style, "one that stresses individuality over conformity, flexibility over rigidity. ...For workers, the trend means career advancement will hinge more often on the ability to think, to reason and learn, rather than on work experience or specific skills." **(Naisbitt's Trend Letter) (Holtz 1109)**

Intuition, though seldom used well by organizations, can be the key to improved strategic planning and decision making. This article describes a brain-skill management program. Steps are described for locating intuitive talent and integrating it with traditional management techniques for improved strategic planning. A spin-off result: organizations develop "a commitment to experimentation rather than to bureaucracy." **(The Futurist) (Prichard 1070)**

7. **CONTINUING EDUCATORS MUST RESPOND TO THE TRAINING NEEDS OF ORGANIZATIONS WITH 100 OR MORE EMPLOYEES. IN 1990, THESE ORGANIZATIONS SPENT MORE THAN $45 BILLION ON TRAINING.** This major article pinpoints where the money goes--to which employees, for what subjects, and to which designers and deliverers. Are you surprised to learn any of the following: that salespeople are the most intensively trained employees in America, followed closely by professionals, first-line supervisors and middle managers; that outside educational providers are used most often in training professionals, senior managers, and executives; that videotapes, lectures, one-on-one instruction, and slides are the top four most used instructional methods; and that the top three training and development challenges are technological change, customer service, and quality improvement? A close reading of this article is required to sort out the possibilities for continuing education. **(Training) (Brooks 1079 and Stout 1096)** This article claims that the hot topics for business seminars in the 1990s will on the new decade itself, global relations, competitive marketing, customer service, motivation/incentives, humor, literacy, foreign-born employees, and the environment. Themes for seminars in this new decade may be summarized as: global competition, ever-changing technology, environmental responsibility, and "an urgent interest in the basic skills of American workers." **(Training) (Chandler 1051)**

8. **RETIREES NEED HELP IN SORTING OUT OPTIONS FOR A RETURN TO THE WORKPLACE AND FOR COPING WITH HEALTH COSTS.** There are definitely mixed signals out there. Some experts believe the country is beginning to realize that workers age 55+ are needed in the labor force and that business and industry are responding. On the other hand, the menial, low-pay jobs offered to seniors who may have held very responsible positions are a turn-off. The fact is, "for the past five decades, the nation's older workers have been leaving the labor force in droves." Based on one recent survey of men age 55 to 64 and women between 50 and 59, "analysts concluded that 1.1 million, or 13.6 percent, of the nonworking Americans in these age groups genuinely wanted and were able to work. In other words, 86.4 percent were not really interested." For those who really want to work or must to make ends meet, many are confused about their options and the impact upon their Social Security benefits. **(U.S. News & World Report) (Fabris 1056)** Retiree health care benefit plans, financed on a pay-as-you-go basis, are a prime target for cost-cutting. Looking to 1993 when "corporations will be required to show retiree health costs as liabilities on financial statements...some companies are telling new employees they will never qualify for post-retirement medical coverage, even if they become vested in a pension." This could affect the current early-retirement trend. Infrequently (but is it on the rise?) retirees lose their life and health benefits when the companies they worked for fail. "In extreme cases, premiums may exceed a retiree's pension check." **(Changing Times) (Andrews 1110)** Results of an insurance industry survey of 400 executives show that employees will pay more of the cost of reduced health benefits. One of numerous reasons offered was the price of providing health care to retirees who could make hefty claims for 30 to 40 years after retirement. **(The Futurist) (Prichard 1069)**

9. **IF THE PLIGHT OF CURRENT RETIREES SEEMS SHAKY (see 8. above), MASSIVE PROBLEMS LOOM FOR BABY-BOOM RETIREES (oldest boomers now age 44). It is not too early to engage baby-boomers in problem-solving, as well as raise awareness of all segments of society as to a possible crisis.** The leading edge of boomers could begin retiring in 2000. "By 2025, as many as 58 million workers and dependents, or more than double the current number of retirees, may leave work for good," supported, in part, by a smaller work force. The pessimists predict that half the baby boom won't have the resources to retire at age 65. The optimists predict that "tomorrow's retirees will be at least as well off as today's." Most agree that the 1990s must be spent in preparing for the Retirement Century. Key factors and decisions relate to Social Security, the national deficit, the savings rate, pension funds, and "the two trends that could clobber tomorrow's retirees," the rising cost of health care and declining health-insurance coverage. Policy makers will need to be creative, such as providing sabbaticals to workers in their 30s or 40s in return for working to age 70 or 75. **(U.S. News & World Report) (Fabris 1061)**

10. **WHATEVER THE WORK SETTING, TEAMWORK IS INCREASINGLY SEEN AS THE KEY TO IMPROVED PRODUCTIVITY, SERVICE, HEALTH CARE, AND SAFETY. Continuing educators are in a position to design and deliver teamwork-training, individualized from what could be called a "generic" course.** A recent outstanding example of teamwork was Atlanta's success in landing the 1996 Olympics. **(Many articles in scanning files.)** Also, it is the conclusion of the Federal Aviation Administration (FAA) that "60 percent of fatal airline accidents were caused by breakdowns of communication in the cockpit rather than mechanical failures or lack of pilot skills." Remedy? The FAA is putting increased emphasis on flight crew teamwork. **(Atlanta Journal/Constitution) (Fabris 1062)**

*** For more program ideas, please see the MONITOR section, pp. 10-15. ***

THINKING OUT FRONT

Forecasts of what's to come in the next 5-60 years may produce anxiety, exclamations of "I'll believe it when I see it!," or even quiet acceptance (because you've thought the same thing). So what is your reaction to the following?

- "By the year 2100, the number of U.S. banks will be fewer than 100, compared with about 15,000 in the 1980s."
- "Cash money will become illegal in the future for all but very small transactions. ...By 2050, no paper money with a value of more than $10 will remain in circulation."
- "Future sewage-treatment plants may use sound waves and heat to dry out sludge in a matter of seconds..."
- "By the year 2025, Christians in first-world countries will comprise slightly less than one-fourth of all the world's Christians."
- "Almost one-fourth of the world's population will be Moslem by the year 2020."
- "Food and pharmaceutical companies will unite in the 1990s to form 'pharmi-food' companies. Immunologists will create foods that can treat viruses and cancer."

Forecasts from 1989 issues of THE FUTURIST magazine.

Georgia

Within a stone's throw of The University of Georgia, a private school, Athens Academy, has received a $5.65 million grant from the Bertelsmann Foundation, a major international media conglomerate. The goal is to teach secondary students how mass media impacts on their lives. Several Georgia Center staff with computer expertise are consulting with Athens Academy. **(Athens Observer) (Craven 1081)** Competition is fierce among factions south and north of Atlanta to become the location of Georgia's second airport. Delta Airlines, for instance, has stated that it will not sign pre-construction leases on any airport south of Interstate 20. Others view a new airport as a vehicle for economic growth; therefore, many politicians and business people south of Atlanta are fighting to bring the bacon their way. **(Georgia Trend) (Hardaway 1099)**

Race and the South

Reverse migration since 1980 accounts for more than 100,000 blacks moving into the South than have left. "Census data show that between 1980 and 1990, the proportion of all American blacks living in the South increased--for the first time in the 20th century--from 52 to 56 percent." An even brisker migration in the 1990s, as predicted, would have major cultural and political implications. Some of the reasons for this reverse migration include the following:

- 67.5 percent of all black elected officials in the USA are in the South;
- only 5 percent of Southern whites oppose sending their children to school with blacks (same percentage as in the North);
- while some one-fourth of Southern black students attend schools that are 90 percent black, the figure in the Northeast is twice as high;
- more than 50 percent of Southern blacks own their own homes, compared with 31 percent in the Northeast;
- "There is a strong sense of regional identity that makes life in the South attractive to many blacks." **(U.S. News & World Report) (McGinty 1076)**

Race and Health Care

In the Mississippi Delta, where the population is nearly 70 percent black and poverty is rampant, the health care system has failed. Many available jobs offer no health care and the limitations of Medicaid and Medicare create problems difficult to solve. Nationwide one of the more startling findings lies in a statistic called "excess deaths." "The number of black Americans who die each year, minus the number you'd expect to die in a group of whites of the same age distribution" yields the excess deaths figure. In 1987, there were nearly 75,000 excess deaths among black Americans, "...nearly one-third of the total number of black people--almost 255,000 who died in 1987." For example, the degree by which the death rate for blacks exceeds that of whites is 32 percent higher for cancer; 82 percent higher for stroke; 132 percent higher for diabetes; and 176 percent higher for kidney failure. **(American Health) (Hardaway 1098)**

Disabled Americans

A study of the economic well-being of disabled males of working age from 1962-1984 is troubling. "For example, for the disabled population as a whole, equivalent family income rose from $22,400 in 1968 to $27,800 in 1973 and then fell to $20,800 in 1982, recovering somewhat to $22,700 by 1984." Several explanations are given, including the fact that "after 1980, the controversial

retrenchment in disability benefit programs struck, and the well-being of the disabled--both relative and absolute--fell further. They, along with single-mothers and their children, minority youth, and elderly widows, became part of the new unequals of the 1980s." **(Journal of Human Resources) (McLaurin 1086)**

Higher Education

"After nearly 10 years of trying to eliminate its international education programs, the Education Department is taking a new interest in efforts to foster relationships between American colleges and their foreign counterparts." John C.T. Alexander, director of the department's Center for International Education, is given credit for renewed efforts to find "the right niche," things the Center can do over and above what is more appropriate for colleges and other international education organizations. Currently, the department has $40 million budgeted for international education. **(Chronicle of Higher Education) (Parker 1091)** Entitled "Hard Times on the Old Quad," this article looks at higher education's response to rising costs and a shrinking student population. Overall, schools are raising their fund-raising targets and cutting back sharply on programs and services. Cornell, Columbia, Yale, and Harvard are talking billion-dollar fundraisers. Many colleges and universities are phasing out graduate programs, sports programs, and special professional schools. For example, Bryn Mawr has dropped Spanish and anthropology, Northwestern its nursing and dental hygiene programs, and Dartmouth has cut seven junior varsity sports. High tuition is driving many students from private to public institutions, even as "state legislatures across the country are slashing their subsidies to higher education." **(Time) (Hardaway 1100 and Parker 1090))**

Bureaucracies in the Information Age

Sluggish bureaucracies must become leaner, more innovative, and faster. Emphasis must be on achieving the highest standard of excellence rather than on wiping out competition. **(Successful Meetings) (Brooks 1077)** According to Toffler, "the entire structure of power that held the world together is now disintegrating," brought on by "the rise of a radically new system for wealth creation." The new system requires more data, information, and know-how in faster time than our bureaucracies can handle. The crisis comes when the bureaucratic way of acquiring and relaying information is overwhelmed (specialists gather data in "cubbyholes" and managers relay it in "channels.") What's needed are "non-hierarchical communications networks...that crisscross companies, crash through departmental perimeters and link users not merely between the specialized departments but also up and down the hierarchy." In companies of the future people and information will be organized in models described as "monastery...improvisation jazz combo...spy networks...tribes," often co-existing in the same company. **(Newsweek excerpts from the book Powershift) (McGinty 1080)**

Workplace

The need to balance family and work responsibilities will make "supervisory sensitivity" the second wave of employers' responses to the changing American work force, according to a report by the Bureau of National Affairs, Inc. (The first wave of response produced child care assistance, flexible work schedules, parental leave and elder care programs.) Already, Corning, Inc. has fired supervisors who resisted the new family-sensitive approach to worker problems. IBM, Aetna Life & Casualty, and Merck Inc. are cited for introducing family-sensitivity training for managers. **(Atlanta Constitution) (Fabris & Reynolds 1058; McGinty 1075)** Companies are being pushed to help employees respond to urgent work-family-lifestyle needs, many of which cannot be met in the traditional nine to five workday. **(Atlanta**

Journal & Constitution) (Fabris & Reynolds 1057) Marriage, divorce, and child rearing patterns are now so diverse that current analyses of family include: "nuclear families, singlehood, non marital heterosexual and homosexual cohabitation, single-parent families, remarried and step-families, foster and adoptive families, childlessness, nonsecretive extramarital relationships, and multiple-adult households." (The Futurist) (McGinty 1064)

A new Immigration Act, the first since 1965, will promote "diversification" and "equalization." In coming years, immigration levels will rise from 500,000 to 700,000 a year and 140,000 slots will be alloted for high-skilled professionals. Many will have advanced degrees or valuable specialized knowledge in some field. Also welcome: immigrants who have at least $1 million with which to start a business that will create at least 10 fulltime jobs in addition to jobs for the owner and relatives. Why this new emphasis on skilled immigrants? The USA doesn't have enough talent in a workforce that will expand by only one percent annually in this decade. Americans will need to sort out mixed emotions about immigration, although nearly 100 million of us, "40 percent of the population, can trace their roots to a relative who passed through Ellis Island." (FutureScan & Newsweek) (McGinty 1065) The proposed new immigration act involves a policy shift. "Since 1965, almost all new immigrants have received visas based on family connections, but now the emphasis is shifting to talent and training." (U.S. News & World Report) (Fabris 1059)

The author of this article questions the emphasis management is giving teamwork, in that so often employees respond with "cynicism, apathy, and generally, a negative response." For one thing, the team player concept, based on the sports team model, is out-of-place in the business environment. "One of the foundations of American culture is individual effort. In sport, there is the opportunity for players to glorify in this effort...." In the workplace, "under the guise of establishing teams, what supervisors often produce is cliques. ...Basically it becomes more important to be accepted than to produce." (Records Management Quarterly) (Dowdle-Head 1141)

As a way to attain strategic change, a long-term management development strategy, sometimes called the "building blocks approach," has been adopted by GE, Xerox, Northern Telecom and others. Training effectiveness should be measured (1) immediately, to determine the degree that managers think a program has met its objectives, (2) intermediately, to determine the degree to which managers change behavior on the job, and (3) long-term, to determine the degree to which the organization is able to compete more effectively. (Training & Development Journal) (Stout 1094)

Increasingly, American companies are concluding that the new skills they require of employees are best obtained through ongoing retraining programs designed for recruits as well as seasoned managers. "They can't expect some government program or a private group to do this. To offer the specific training needed...they must do most or all of this themselves." (RETRAINING THE AMERICAN WORKFORCE in Executive Book Summaries) (Gilbert 1128) Probably because of temporary aberrations in the U.S. economy, 1990 training budgets show only a 2.5 percent increase. (The increase was 12 percent between 1988 and 1989). (Training) (Stout 1095) This 14-page article, "Where the Training Goes," charts and graphs how organizations with 100 or more employees will spend $45 billion on training in 1990. It identifies the employees who will be trained, what subjects will be taught, and who will design and deliver the training. The five hottest topics in HRD for the next two to five years are (in order of importance): (1) technological change, (2) customer service, (3) quality improvement, (4) corporate culture, and (5) new market strategies and organizational missions. (Training) (Brooks/1079 and Stout/1096) Employers now want employees to have "soft-sided"

versus technical skills. Top skills in today's workplace: learning to learn; literacy (reading, writing, computation); communication; personal management; adaptability; group effectiveness; ability to influence. **(Atlanta Constitution) (DeJoy 1048)**

Meeting/Convention Environment

The meeting and convention business increased 37 percent in the past two years, the largest two-year growth ever recorded. Annually, corporate meetings attract 94 million participants and account for nearly $44 billion in expenditures. Demand is high for in-house corporate meeting planners. **(Naisbitt's Trend Letter) (Holtz 1108)** Increasingly, corporate planners look to specialized conference centers when selecting training sites for managers. This article focuses on what Atlanta corporate planners can choose from. A small map pinpoints five conference centers in Atlanta; the Georgia Center in Athens; the Southern Center for Continuing Education in Statesboro; and the Coastal Georgia Center for Continuing Education in Savannah. The International Association of Conference Centers (IACC) provided the information and map. **(Atlanta Constitution) (Allen 1047)**

Service

Even the best service organizations make mistakes and suffer glitches. To come out ahead with customers requires that service staff understand the concept of "recovery." It costs five times more to replace a customer than it does to retain one. Therefore, dissatisfied or irate clients need to be "recovered," not lost. Unfortunately, studies show that more than half of all efforts to respond to customer complaints actually reinforce negative feelings. The problem lies in asking service staff to solve customer problems without allowing for decision-making and, yes, rule-breaking on occasion. Pursuing such a service strategy requires trust and support from management but is well worth the effort. **(Harvard Business Review) (Simpson 1097)** This article summarizes the innovative actions of 13 leaders in the travel industry to redefine business travel through service, i.e., taking the hassle out of a stressful experience. As the 1980s dawned amidst deregulation, airline leaders thought "that price was paramount." Soon, however, they received the word from frequent flyers that they "would judge airlines on the basis of how well they performed, not how cheaply." **(Frequent Flyer) (Andrews 1112)**

Marketing

Just as "consumers are striving for individuality, becoming more diverse and fragmented...companies are striving for simplification and consolidation of their businesses." The advertising agency NW Ayer recommends returning to a consumer-driven focus for products and marketing with careful attention to personal relevance. In a new book, **The Great Marketing Turnaround,** "10 significant trends which are the reverse of traditional marketing thinking" are identified. The new environment is individualized targeting using computer technology. **(FutureScan) (Gilbert 1142)** Food service providers take note. A study of the dietary habits of women found a correlation between high educational and income levels and low meat consumption, especially red meat (beef and pork). Those women who eat red meat prefer it as part of the evening meal and then preferably in mixed dishes rather than served alone. **(MAFES Research Highlights) (McLaurin 1084)**

Technology

A breakthrough European technology will allow compact disc quality, digital audio broadcasting (DAB) on radio. The FCC is now studying how to adopt standards and allocate spectrum for DAB. One current plan would allow each existing station to obtain a DAB license when they become available. **(Radio World) (Craven 1082)** Much of the U.S. is being converted from existing wire phone lines to fiber optic networks. Fiber optic cable will allow the use of remote audio delivery systems such as the Integrated Service Digital Network (ISDN). "The D word has come to broadcast remotes...in a process described as very, very revolutionary." **(Radio World) (Craven 1083)**

Satellite delivered distance learning is picking up steam to the extent that educators must begin to shift from "occasional use" arrangements to locking-in transponder space long term. The State of Nebraska was the first state to lease a transponder on a full-time, year-round basis. **(Via Satellite) (Pasquale 1050)** Time on transponders is becoming difficult to find and costs are rising with demand. The situation will worsen before additional satellite transponder space is provided. **(Corporate Video Decisions) (Shehane 1121)**

Computers. Telecommuting has not lived up to the expectations raised several years ago. Bosses worry about employees working from home via a computer and modem. Employees worry about being out-of-sight, out-of-mind for promotions. Yet, there are numerous reasons to foster telecommuting: clogged expressways; juggling work-home responsibilities; providing the disabled with work opportunities. IBM and AT&T are currently studying the use of telecommuting. Stay tuned. **(Atlanta Journal) (Brooks 1078)** If your fingers and hand tingle, burn or become numb or you have shooting pains in the arm and shoulder or you have difficulty gripping a hammer or turning a radio dial, you may have developed a repetitive-motion disorder known as carpal tunnel syndrome (CTS). Computer keyboard operators are among those prone to develop this wrist-wrecking affliction which, left unchecked, can permanently damage hand function or strength. Tips are given for how to relate to a computer keyboard to alleviate CTS pain or prevent the development of CTS. **(Health Scene) (Prichard 1067)** Consider these software packages for adults: "The AIDS Stack," a HyperCard program for exploring available information on the disease; "The Electronic Whole Earth Catalog," accessed via a Macintosh with a CD-ROM disk drive; and "The Name Game" for the IBM Infowindows system, a game-approach to name-recall. **(The Futurist) (Prichard 1072)** The experience called "virtual reality" can be attained by someone wearing video screen goggles and an interactive glove hooked to a computer. As head and hand are moved, the computer image moves correspondingly. Virtual reality is a superlative simulation experience and should encourage creativity. **(Communication Arts) (Dowdle-Head 1140)**

In the 1990s, powerful wireless personal telephone services will be what personal computers were in the 1980s. New technologies include: phones that fit a shirt pocket and call worldwide via satellite; "Dick Tracy" style wristwatch pagers; plane to plane calling; and super radio station reception via a dish on top of your car. Barriers to rapid spread include cost, crowded airwaves, and fear of disclosing business secrets. Note: The Georgia Center has volunteered to be a test site for AT&T's short range personal telephone system. **(USA Today) (Skelton 1119)**

Copyright Law

To what ridiculous extremes can fears of software piracy be taken? Read on. The Council of European Communities has issued a directive establishing an infringement of copyright on the part of those who "make, import, possess or deal with articles intended to facilitate the removal or circumvention of any technical

means which may have been applied to protect the program." This means someone could be in violation simply by owning a copy of **PC Magazine**, in which an article describes a simple program-change in a copy-protected software. In addition, software developers are expecting people who buy laptop computers (as extensions of their desktops) to buy additional copies of all software. Not a very realistic expectation. **(PC Magazine) (Shehane 1122)** Earlier in 1990, Congress approved a bill that eliminates higher education's immunity from copyright infringement lawsuits. "It was prompted by court rulings that prevented states from being sued under federal copyright law..." **(Higher Education & National Affairs) (McGinty 1126)** In a series of court decisions regarding the fair use of unpublished works, including diaries and letters, it has boiled down to this: "quoting almost **anything** unpublished, regardless of commercial value, presumptively violate(s) a copyright." Writers and publishers are left with this quandary: "how to write history in a straitjacket." The matter was being taken to the Supreme Court. **(Newsweek) (McGinty 1127)**

Demography

This is an interesting analysis of emerging use of the terms "urban and rural," "metropolitan" and "micropolitan," and "central city" and "suburbs," in relation to changing patterns of migration in the U.S. "Unlike the rural renaissance of the '70s, when many young professionals abandoned city life for the country, today's migration pattern is overwhelmingly urban. Baby boomers, it seems, want big-city amenities without big-city stresses. More often than not, smaller cities spell relief." Desirable places to live are named. **(Health) (Andrews 1111)**

SCANNING ACKNOWLEDGEMENTS

The second of two rounds of environmental scanning analysis in 1990 concluded with meetings of the Evaluation Committee on November 13 and the Strategic Planning Executive Committee (SPEC) on November 19. In particular, thanks are due the following scanners who either submitted abstracts, provided library or HyperVote support, and/or served on an analysis committee:

Phil Allen
Grover Andrews
Karen Bishop
Pat Brewer
George Brooks
Brad Cahoon
Jan Campbell
Judy Chandler
Roger Comley
Susan Conover
Ernestine Copas
Gene Craven
Bud Davis
Judith DeJoy
Rosie DiGeorgio
Margaret Dowdle-Head
Bill Evans
Frank Fabris
Linda Gilbert
Cathy Gleaton
Dick Granum
Jacque Hall
Marla Hall
Beth Hardaway
Hal Holtz
Amy Hooper
Bonnie Lawson
Donna McGinty
Sylvia McLaurin
Martyn Miller
Helen Mills
Dorothy Parker
Mike Pasquale
Cheryl Prichard
Jo Reynolds
Clate Sanders
Doris Scott
Jim Shehane
Lynn Sherrer
John Shores
Mitch Skelton
Ed Simpson
Vickie Stout
Marietta Suhart
Rex Totty

UPDATE:
What Difference Has Environmental Scanning Made?

Since September, 1985, scanners have looked at scores of trends and issues which could affect Georgia Center operations, human resource development, and continuing education programs. (For a summary, see the January, 1990 issue of **Lookouts**.) Management has adjusted the strategic action plan, as necessary, in response to numerous discussions related to economic, political, educational, social, and technological changes.

Throughout the year, the management team tracks scanning assignments. The key is the **Red Book** which shows at a glance who (by name) is to do what by when. This loose-leaf red notebook is updated at the conclusion of each round of scanning and provides the reference for obtaining progress reports at Monday morning meetings of the directors and monthly meetings of department heads. For example, as of November...

- Several pending assignments were completed and will be deleted from the **Red Book**. The IBM and MacIntosh computer labs are operational; a Georgia Center "philosophy" statement, based on staff input, has been completed; and planning is underway to join the Council on Adult and Experiential Learning (CAEL) in a venture which will aid regional economic development.

- Still-pending are assignments related to international education; staff competency in grantseeking; an audit of non-credit programs; R&D in individualized instruction through technology; and the Center's role in continuing higher education vis-a-vis the Board of Regents Plan for the 1990s.

- New assignments added to the **Red Book** call for department heads to formalize plans for operating with decreased state funding; for the Center to involve the University's environmental safety unit in staff concerns related to videodisplay terminals (VDTs); and for provision of a "sensitivity training" session to assist managers and supervisors in managing cultural diversity.

Obviously, an active scanning program puts many balls in the air; and all must be juggled if strategic planning is to respond effectively to opportunities and threats in the environment. (Left out of this particular discussion is another "ball," the need to continuously monitor trends and issues previously discussed but for which there are no pending assignments.) As the Georgia Center's director sums it up, "Environmental scanning imposes organizational discipline difficult to achieve in any other way."

SCANNING PLANS FOR 1991

- During January and February, current scanners will be contacted to see if they wish to remain scanners in 1991. As you know, scanning is a voluntary activity for staff other than directors and department heads.

- If you joined the Center staff in 1990 and have an interest in becoming a scanner, please watch for a general communication which will set a time and place to learn more. (Or call Donna McGinty at 542-3451.)

- Committee meetings will be in June and late November or early December. Details later when the scanning roster is set.

Appendix D

Future Concerns of Cardinal Stritch College

FUTURE CONCERNS
OF CARDINAL STRITCH COLLEGE

May 1991
Vol. 1, No. 3, part 1

As the end of the semester approaches the quarterly report of the Cardinal Stritch College Environmental Scanning Committee marks the occasion with its third publication. Thanks to your support there are currently 101 different publications being scanned by 70 members of the Stritch Community. Over the past three months 211 articles were submitted for review and because of the high number of articles, this publication will be distributed in two parts: one in early May and one in late May.

SCANNING SUMMARY
February 1991 thru April 1991

ECONOMY

1. An economic storm cloud hangs ominously over higher education this year, as states throughout the nation confront their direst budget crises since the recession-ridden early 1980s. After several years in which college leaders predicted the worst and did slightly better than that, 1991 is shaping up as a year of true financial hardship for state colleges and financial-aid programs. Across the country, higher-education and state officials predict that the budget problems will leave many colleges with appropriations for 1991-1992 that barely keep pace with inflation--or, in the worst cases, with reduction in state support. The appropriations outlook is expected to prompt an unusually high number of states to impose large tuition increases this year and may ultimately result in some colleges closing their doors. (*Chronicle of Higher Education*, Feb. 20, 1991, hereafter cited as *Chronicle*)

2. Because of the economic concerns and decreasing enrollments, a large number of liberal-arts colleges are being forced to face up to cost-saving measures but fear their character may be affected by the cuts. Many colleges are finding that they must cut back on spending and find new ways to increase income. Administrators across the country say they can no longer rely on increased tuition to cover higher operating costs. Instead, they are consolidating jobs, cutting academic programs, reducing financial aid, and delaying construction projects. As a results colleges like Bowdoin, Bryn Mawr, Franklin and Marshall, Oberlin, Smith, and Swarthmore are in desperate financial situations. Bryn Mawr College is eliminating four graduate programs, Smith College faced a $2.6-million shortfall this year, Dartmouth is cutting its operating budget by 1.8 per cent and eliminating 55 administrative and staff positions, Oberlin faces a deficit of $3.5-million, and Bowdoin has a $2-million deficit. Subsequently, Mundelein College, Illinois' only surviving all-women's college, has recently announced that it will be folded into Loyola University. Mundelein presently has more than a $6-million debt. (*Milwaukee Journal*, April 17, 1991, *Chronicle*, Jan. 30, 1991, Oct 31, 1990)

3. The investment returns enjoyed by college and university endowments in the 1980s have sagged like much of today's economy. In a report of its annual endowment study, the National Association of College and University Business Officers said that college funds, feeling the pinch of an economic downturn, grew by 9.6 per cent the previous year. College endowments grew an average of 13.4 per cent each year from 1981-1990. Several major foundations, increasingly concerned about the quality of elementary and secondary education, are devoting a greater share of their grants to the schools. The increasing attention to pre-college education among foundations has drawn mixed reactions from higher-education representatives. Although many college officials agree with foundations that the problems affecting the quality of schools are severe, some fear that another source of support may be slowly evaporating--a particularly troubling development in an economy shaken by the recession. (*Chronicle*, Dec. 19, 1990, Feb. 13, 1991)

4. As a wave of cost cutting seeps through higher education, colleges and universities must plan now for smaller staffs, avoid across-the-board cuts, and recognize that "administration is not the business of the business." Those are some of the recommendations contained in a report released recently by the Pew Higher Education Research Program. The report notes that the 1980s were a decade of unprecedented growth at colleges, with the great expansion occurring in administrations. By contrast, the 1990s will

probably turn out to be a period of unprecedented austerity for higher education. (*Chronicle*, Jan. 13, 1991)

5. Administrators at the annual meeting of the American Council on Education in San Francisco stated that college presidents are fearful of the added burden of the Iraqi War on the U.S. economy in addition to the already gloomy forecasts. Also troubling aspects included the renewed student unrest on campuses over race and other issues across the nation. College officials were particularly glum about the prospect of federal dollars' being eaten up by military expenses and of state legislatures' freezing, or even cutting, spending on higher education. They were, however, hopeful about the prospect of strengthening international ties, especially with institutions in Europe. (*Chronicle*, n/d)

6. One of the more complex problems faced by business officers at colleges and universities is the spiraling cost of health care. The average rise in health care costs for 1990 was 21.6% and a recent study from Washington, D.C. estimates that if the increase continues, Wisconsin's per person health care costs will soar during the 1990s and will average $5,567 a year by 2000. This would be a 407% increase in ten years. However, cost controls for doctors and hospitals, coupled with national health care, could cut medical costs 20% and save $274 billion a year by the year 2000 according to a report from Families USA Foundation. Even with these mandated federal controls, however, costs would double in the next decade for Wisconsin. (*Milwaukee Sentinel*, Nov. 20, 1990, Nov. 1, 1990, *NACUBO: Business Officer*, March 1991)

7. In January 1990 the *The Business Officer* ran an article outlining many of the demands and constraints which were being imposed upon higher education. The following points were emphasized, and after one year the demands have become realities, affecting colleges and universities for the 1990s: the government is increasingly involved in our lives and colleges have more rules with which to comply; because of a loss of confidence in higher education, colleges are working with relatively fewer dollars; demographic changes have imposed different demands on institutions; there is a real global competition in higher education; and we are witnessing a continuation of the trend of a more technologically based college/university. (*Central Association of College and University Business Officers*, April 1991)

8. Tenured professors at financially strapped campuses are facing hiring freezes, salary cuts, tight travel budgets, and less office help. But one thing most of them have not had to worry about is their tenure--at least not yet. So sacred is tenure that four-year colleges and universities are doing whatever they can to avoid dismissing tenured professors for financial reasons. Reports from across the nation indicate that professional and support staff are being released, tuition is increased, and even vice presidents are out of work, but tenured faculty will be protected until schools run out of options. (*Chronicle*, Jan. 27, 1991)

9. Tuition increases will vary widely in 1991-1992. Some private colleges will announce the lowest percentage increases in years, while many public institutions plan hefty increases to make up for shortfalls in state appropriations. Overall, the rise in tuition is likely to outpace inflation in the next academic year. The Consumer Price Index for 1991 was 5.7 per cent, while at four-year private colleges throughout the nation, the average tuition will rise 7 to 9 per cent. In New York, faced with a potential $6-billion deficit, Governor Cuomo is seeking a 56% increase over last year after remaining unchanged for eight years. Private college tuition and fees in Wisconsin will average $8,878 in 1991-1992, an increase of 8.5% from the previous year. (*Chronicle*, March 6, 1991, *Milwaukee Sentinel*, March 6, March 26, 1991, *Milwaukee Journal*, March 27, 1991)

10. The recession that experts predicted would eventually hit Wisconsin is starting to effect the area. Harley-Davidson Inc. announced a 400 employee layoff in February 1991, Briggs & Straton Corp. plans a seasonal layoff of approximately 890 workers in April, and the housing market in the Milwaukee area declined in early 1991, continuing a trend that began last August. While a milder recession than the rest of the country is expected for the state, the economic problems will have an effect on state colleges and universities. For example, it has been estimated that the rate of increase in state support for higher education has dropped to a 30-year low. On the average states will increase spending by 11.6 per cent, according to a study by the Center for Higher Education at Illinois State University. Wisconsin, however, will increase spending by 14%. College officials blame the budget picture on the worsening national economy for the low rate of increase. (*Chronicle*, Oct 24, 1990, *Wall Street Journal*, Nov. 29, 1990, *Milwaukee Journal*, Nov. 12, 1990, Feb. 4, 1991, Feb. 18, 1991, March 18, 1991, March 19, 1991, April 13, 1991, *Milwaukee Sentinel*, Feb. 7, 1991, Feb. 9, 1991, Feb. 12, 1991)

FINANCIAL AID

11. President Bush recently proposed a significant increase in the maximum size of a Pell Grant with his budget requests to Congress. However, he also proposed cutting many middle-income students out of the grant program. The idea merely represents a redistribution of the grant money from middle-income families to low-income families. Trade schools, two-year colleges, and many moderately priced four-year institutions would reap the biggest benefits. The new proposed maximum Pell Grant increase would be $100, to $2,400, the first such increase in three years. He also proposed that Pell Grant recipients who are in the top 10 per cent of their high school classes or top 20 per cent of their college classes receive additional grants of $500, while eliminating students in the bottom 10 per cent. Overall, federal funds for student-aid programs would increase by 10 per cent for 1991-1992. If the proposal is enacted, critics say, it could discourage some students from taking tough courses and force others to drop out--including many good students. Ultimately, the budget represents only a modest cost-of-living increase in money spent on higher education. The President's plan to provide $6.7-billion for grant programs in 1992--exactly the same amount as in 1991--would mean the programs would lag behind inflation. (*Chronicle*, Oct. 31, Jan. 23, Feb. 20, 1991)

12. The Education Department may get the credit or blame for federal education policies, but many crucial decisions about them are actually being made at the White House Office of Management and Budget (OMB). The OMB has recently become more involved in the nitty-gritty of student-aid policy making because of relatively weak leadership of former Education Secretary Lauro F. Cavazos. President Bush has accepted the following OMB suggestions for the new federal budget: major cuts in the College Work-Study and Supplemental Educational Opportunity Grant programs to pay for an increase in Pell Grants for the neediest students, a new joint committee of OMB and the Education Department to examine the management of student-loan programs, and a more hands-on approach to education. (*Chronicle*, March 20, 1991, *NACAC Bulletin*, Jan. 1991)

13. As grants diminish and tuition increases continue to outpace inflation, student loans are playing a bigger part in financing higher education. The number of student borrowers nearly doubled to 4.5 million in the fiscal year ended last September from a decade earlier, and the amount borrowed, adjusted for inflation, rose 61% to $12.35 billion, according to the Department of Education. Total average indebtedness for students who graduated in 1986, the most recent year for which the department has figures, was $6,810 for public-college graduates and $10,000 for those coming out of private schools. Simultaneously, the Education Department will ask Congress to toughen the Higher Education Act to cut down on defaults in the Federal student loan program. Loan defaults are costing the nation nearly $2 billion a year. (*Wall Street Journal*, Dec. 3, 1991, March 6, 1991)

ENROLLMENT

14. College enrollment rose 3.4% in fall 1990 to a record 13,951,000, according to estimates released by the U.S. Department of Education. In a report based on a survey of 639 colleges, the department said two-year colleges had registered the largest gains, with enrollment up 7 percent to 5.4 million. At four-year institutions, enrollment rose 2 per cent, to 8.5 million. (*Chronicle*, March 6, 1991)

15. Many private colleges are receiving fewer applications from high school seniors for the coming academic year, while public institutions are reporting increases of as much as 15 per cent. Some private college officials say applications are down--from 5 to 16 per cent. Small colleges seem to be reporting the most dramatic declines. Uncertainty over the economy and a decline in the number of high school graduates are being cited as the major reasons for the lower numbers. In addition, new study reports that the number of students from families with middle class incomes ($40,000 to $60,000 last year) are enrolling in colleges and universities at a 5% decrease over the previous year. (*Chronicle*, March 6, April 10, 1991)

16. An article by B. Ann Wright reports that college admissions has entered the world of big business, where a competitive spirit has taken hold, and to many, that means "survival of the fittest." In this environment, media-created lists that rank colleges and universities are available, along with the guides that have been around for years. Wright believes that as the numbers of entering freshmen drop and costs soar, colleges are marketing as if there were no tomorrow, realizing that, for some of them, there may not be. Some colleges are spending as much as $1,700 to more than $2,000 per enrolled student. In this environment of high-tech marketing, students and parents crave easy information, and they share our national obsession with lists that will deliver them from the throngs of ambiguity. However, Wright

insists that media ranking of colleges is often superficial and serves only to further confuse families and prospective students. (*The College Board Review*, Winter 1990-1991)

17. Kevin Carreather, Director of Multicultural Services at Texas A & M University, is considered to be an expert in recruitment and retention and he believes that it is easy to have a successful program. The requirements are a commitment to retention as top priority and a willingness to institutionalize, rather segregate, retention efforts. Facilitating connections between students through study groups and social activities is important, as is frequent monitoring of students, skills enhancement, and sufficient financial aid. It is also crucial that faculty believe in the abilities of students and spend time with them to support and nurture their development. (*Black Issues in Higher Education*, Jan. 31, 1991)

18. A new report by the American Association of Colleges of Nursing (AACN) shows that despite two straight years of enrollment increases, significant numbers of qualified students could not be admitted to schools of nursing this year due to faculty shortages and other budget constraints. According to the AACN, 1989-1990 enrollment of first-time nursing students in the nation's universities and four-year colleges rose, by 5.8 percent. This was the first time in five years that sharply declining numbers of bachelor's degree students in nursing programs have reversed to show an increase. However, the report also noted that the number of graduates is still down and has not been big enough to fully replace each year's graduates. Moreover, students are taking longer to graduate, averaging 4.9 years to complete a four-year BSN degree. (*Enrollment Network*, Nov/Dec. 1990, Jan. 1991)

19. Following large drops in enrollment in the 1980s, many nursing schools are making special efforts to attract students, and in the last two years applications have begun to increase. But the National League for Nursing estimate that the United States still needs more nurses than the schools are able to graduate. It predicts a shortage of 445,000 registered nurses by the year 2000. Nursing school administrators have developed unique strategies for dealing with the shortages. Five Atlanta hospitals pay 60 per cent of the annual $13,700 tuition of 40 Emory University nursing students who agree to work at the hospitals after graduating. The University of Pennsylvania has a new program that helps pay the tuition of 32 nursing students each year as long as the students agree to work at Philadelphia hospitals for two years after graduating. Moreover, this problem is also close to home. In northeastern Wisconsin there are 1,100 fewer registered nurses than it needed, and the shortage rate of the 12-county region is nearly five times the national level. In an attempt to recruit more nursing students, the University of Wisconsin-Milwaukee will begin offering a new accelerated degree program this fall for college graduates in other disciplines who want to change their careers to nursing. (*Chronicle*, Jan. 16, 1991, *Milwaukee Journal*, Jan. 28, March 31, 1991)

20. In 1987, the state welfare office in Marshall Missouri began recording a surge in high-school dropouts, recovering drug addicts and unwed mothers applying for benefits. Some came into the office disheveled, others could barely read or write. Yet surprisingly, the new applicants had something in common: they were graduates of Missouri Valley College, a four-year Presbyterian school. In 1985 the school's budget deficit had exceeded $5-million and Dennis Spellman was hired to restructure the finances. Spellman packed the classrooms with as many warm bodies as they could hold by taking advantage of federal loan programs. Signing up recruits for federally guaranteed bank loans was crucial to making the plan work. Missouri Valley could do this under a provision qualifying people who have dropped out of high school for federal college aid if they show "ability to benefit" from college. The college hired professional recruiters paid on commission and enrollment ballooned from 400 to 1,000. Another Presbyterian school that Spellman ran, Tarkio College in Tarkio, Mo., used similar tactics. Government auditors assert in reports that the two schools misspent $28 million in federal grants and federally backed loans. Moreover, Tarkio has the nation's highest loan default rate--67.3% and Missouri Valley's rate, at 45%, also is high. Spellman still maintains his $100,000 a year job at Missouri Valley but the federal grant law has been changed to help eliminate the loophole problems. (*Wall Street Journal*, Dec. 17,1991)

21. The sluggish economy has found its way to the college campus. Universities in Wisconsin have reported fewer visits from companies this spring and last fall as concerns about war and the economy kept recruiters away. Employee recruiting was down at both the engineering and business schools at the University of Wisconsin-Madison, Marquette University, and Milwaukee School of Engineering. (*Milwaukee Sentinel*, April 13, 1991)

22. The University of Massachusetts at Amherst is giving discounts on the cost of dormitory rooms to 50 students who have agreed to tutor other underclassmen. The program, which started in January, is

designed to help students who are doing poorly in classes as well as to fill empty dorm rooms. Under the program, qualified juniors and seniors help students with such subjects as English, mathematics, and chemistry. In return, the tutors receive a reduced fee of $450--about half the annual cost of a shared dorm room. (*Chronicle*, April 10, 1991)

TRENDS IN SECONDARY EDUCATION

23. A growing number of American schools are introducing the Japanese way of teaching math to its students called Kumon Math. Japan consistently shows up at the top of multinational math assessments and the concept is starting to catch on in the United States. The Kumon Math method is now being used by 1.7 million students in 18 countries. Stressing repetition, the program focuses on building speed and accuracy in calculation. Students must score 100 per cent on sets of work sheets within a prescribed time period--about 15 to 30 minutes--before advancing to the next level. The object is to spend at least 20 minutes every day doing work sheets of math equations and then twice a week attend an after-school program. So far the program has demonstrated wonderful results but many critics contend "It's like doing scales on the piano, it's important, but an overemphasis on drill without concept is not beneficial." (*The Christian Science Monitor*, Feb. 11, 1991)

24. Most Catholic high school students are not learning the basics of the church's teaching on war and peace, a study by the Boston-based Center on Conscience and War concludes. Ninety-six of 267 schools responded to the survey of Catholic high school religious education directors from across the country. While 68 per cent of respondents said war and conscience-formation issues were "absolutely essential," 10 per cent described them as "useful but not of high priority," and 6 per cent said they were too advanced for high school students. (*National Catholic Reporter*, Jan. 1991)

25. John Chubb and Terry Moe, two political scientists, have authored a book titled, Politics, Markets, and America's Schools, in which they attempt to assess public schools in the United States. Their conclusion is that two intangible factors are correlated: the academic balance among students (the mix of gifted and not-so-gifted students within the school) and the ethos of the school. The ethos or the organizational culture associated with schools that produced better results was an atmosphere that emphasized the importance of learning, a consistent and effective pattern of discipline, the frequent use of praise, classroom sessions that were carefully planned in advance, and regularly assigned homework. (*The New Republic*, Oct. 8, 1990)

26. Computers are bringing more challenging ideas into classrooms and freeing teachers to work with students individually, say a research consortium. In its recent survey of 608 elementary and secondary teachers surveyed, the Center for Technology in Education found nearly two-thirds said computers enable them to teach more complex material, and 70 per cent said they spend more time working one-to-one with students since using the machines. (*Education Daily*, Sept. 6, 1990)

27. In a move that may speed the substitution of audio-visual aids for textbooks in American classrooms, the Texas State Board of Education adopted a videodisk-based curriculum program as an approved "textbook." The decision marks the first time that a videodisk program, which uses as its centerpiece a video-based device similar to a compact-disk player, has been allowed to compete head-to-head with standard textbooks in a state curriculum. (*Wall Street Journal*, Nov. 13, 1990)

28. For years U.S. business officers have grumbled about the quality of the nation's high school graduates. Now some U.S. school districts are trying a businesslike solution: warranties. For periods of one to three years, various school districts throughout the country guarantee defect-free graduates to prospective employers. Education warranties work much like those for VCRs or refrigerators, if an employer finds that a recent graduate is unable to read, write or calculate proficiently, the school system will offer free remedial instruction, usually in adult or evening education classes. While the warranties are partially a public relations game, they also provide needed skills to the proper employees. (*Time*, Feb. 11, 1991)

29. Financed by a $1 million four-year grant from the Pew Charitable Trust and a one-year $250,000 grant from the Ford Foundation, a new program entitled "Higher Ground" began this year under Brandeis University's aegis to help some 780 students a year nationwide. The program is geared primarily toward low-income minority families. Students participating in Higher Ground spend the summer before freshman year at the college they will be attending, receiving counseling, taking remedial courses and some college courses, and working at a job that is held for them. More than 90 per cent of students

enrolled in the high school program have graduated; more than 65 per cent have gone on to college, nearly double the usual rate. Higher Ground will be offered at six sites this year, including five colleges across the nation. (*New York Times*, n/d)

30. Georgia will become the first state in the country to establish a special training program to encourage public school teachers to teach--but not preach--about religion, the State Board of Education has decided. The program is designed to recognize the fact that religions have played an important role in our nation, not to espouse any particular religion. Training for the teachers and some administrators will begin in fall 1991. (*Milwaukee Journal*, Nov. 25, 1990)

31. The College Board is offering the Milwaukee Public Schools a $356,000 grant to participate in a project aimed at preparing eighth-graders to take algebra in ninth grade. About half the district's freshmen now take algebra and MPS is one of six school districts around the country selected for the College Board Equity Agenda Project, which is aimed at improving the preparation, participation and success in college of minority students. (*Milwaukee Journal*, Dec. 18, 1990)

32. Milwaukee has more youth gangs and gang-related violence than at any time since the groups began forming in the city about 15 years ago, according to school officials. Exact numbers on membership are difficult to determine--estimates range from hundreds to thousands--but those who track gangs say they are most concerned about an increase in the severity of violence and the disruptive nature within the schools. According to school officials gang activity is in all middle schools and high schools in Milwaukee. (*Milwaukee Journal*, Feb. 3, 1991)

TEACHING TECHNIQUES AND PROGRAMS

33. Energized by the presence of a record 233 presidents and unprecedented cooperation between presidents and sports officials, delegates to the National Collegiate Athletic Association overwhelmingly adopted a package of cost-cutting measures and other reforms. Virtually all of the reform measures--including rules that will cut the size of coaching staffs and the number of scholarships in most Division I sports, phase out athletic dormitories over five years, and limit the length of playing and practice seasons and the amount of time athletes must spend on their sports each week--passed by enormous margins. The reforms met with a great deal of criticism, especially coaches, but the idea is to take pressure off the student-athlete while giving college presidents more authority in athletics. (*Chronicle*, Jan. 16, 1991)

34. Growing concern over the small number of students graduating with degrees in mathematics and the sciences has led a group of liberal-arts colleges to develop a comprehensive plan to improve undergraduate education in those disciplines. The plan, Project Kaleidoscope--so named because it recommends diverse remedies--is based on a two-year study of science and mathematics programs at about 200 of the nation's colleges and universities. The recommendations, discussed at a national conference in Washington, D.C. will be published this spring. (*Chronicle*, Feb. 13, 1991)

35. A new Optimal Mark Reading (OMR) program by Bubble Publishing, lets administrators and teachers create their own scannable forms. Many popular scanners are supported by the program. With the program's help, tests and surveys developed on DOS computers and printed by LaserJet Plus or compatible printers can be scanned into OMR scanners and scored. Those files can be used to generate reports as well as exported to other software packages. The program enables new forms to be created and changes to tests or surveys to be made quickly. (*The Technological Horizons in Education Journal*, Feb. 1991)

36. Harvard's graduate school of education is attempting to address the problems of inner-city schools by offering a program designed specifically to train graduates for urban superintendent jobs. Because of the multitude of problems in large city school districts and the high turn-over rate for superintendents, Harvard is trying to fill the imposing gap. Ten students, seven of them minority-group members, have begun a three-year doctoral exercise that includes a six-month internship in an urban superintendent's office. The effort is short on theory and long on experience. Students study crisis management, labor negotiations, face local television reporters, and ponder administrative dilemmas involving everything from what to do about asbestos in schools to AIDS education. (*Time*, Dec. 3, 1990)

37. Education of business supervisors and managers is being accelerated at Milwaukee Area Technical College. A new program, "Forward Management," allows a person to obtain an associate degree in supervisors' management in half the time of the traditional program. A student is able to earn a degree

in 2 1/2 years of evening study instead of the five years of part-time study usually required. (*Milwaukee Sentinel*, April 10, 1991)

38. In the fall of 1978, Cornell College, a small liberal arts college in Mt. Vernon, Iowa, changed from a semester 4-1-4 system to the One-Course-At-A-Time (OCAAT) calendar. On this calendar professors teach and students take one course only, on an intensive basis, for three-and-a-half weeks. During the long weekend that follows each course, faculty members grade exams and get ready for the next course, while students relax, participate in organized college events and informal activities. There are nine, four-week terms during the academic year. On the tenth anniversary of OCAAT, Cornell College initiated a two-year outcomes study on the effects of the calendar. The results were that: faculty members repeatedly commented on the concentrated energy, focus, and intense study; the program provides opportunity for varied class activities, including active modes of learning; the structure is a powerful impetus to go to class and develop good study habits. (*CAPHE Connections*, Summer 1990)

39. In fall 1990, Boston University embarked on a dramatic experiment, the private takeover of one of the state's worst public school districts in Massachusetts. In theory, it all seemed so clear. The poorest school district in the state admits its failure and turns over its district--broken locks, paltry stock, and empty barrels--to the can-do men of academe. With a clear purpose and a 10-year contract, BU moves swiftly and boldly, establishes a total educational system and becomes nothing less than a light to the nation. However, success has not been quick to come. John Silber, president of BU says the experiment is a massive undertaking and the educational leaders of the nation are keeping a close eye on the situation, but it will take at least five years before any significant progress will be made. (*Newsweek*, Sept. 17, 1990)

40. When South Pointe elementary school opens in September 1991, it will be the first public school in the nation to be operated by a private company. Last June the Board of Education signed a five-year contract with Education Alternative Inc., a for-profit company, to design South Pointe's classrooms and curriculum, and train the Dade County teachers and administrators who will work at the school. (*Newsweek*, Oct. 22, 1990)

DID YOU KNOW THAT

... the Council of Postsecondary Accreditation reports that approximately 30 U.S. institutions have opened branches in Japan.

... in 1989, an estimated 200,000 GED candidates (33%) took the GED tests in order to enroll in post-secondary education programs.

... only 6.4% of GED candidates reported that their main reason for dropping out of high school was not doing well in class.

... a recent survey published by Arthur Levine, chair of the Institute for Educational Management in Harvard University's Graduate School of Education, cites that college students have become more optimistic. In 1978, 41 per cent were optimistic about our collective future. However, in 1989-1990, 83 per cent reported that they were optimistic about our collective future.

... the dissertation as a doctoral-degree requirement is "alive and well," but advising for graduate students is in poor shape, concludes a report by the Council of Graduate Schools.

... school officials indicate that more than 500,000 U.S. children are being schooled at home, a tenfold increase in the last decade.

... the National League of Cities has reported that people in the nation's largest central cities have incomes only 59% as high as those of people in the surrounding suburbs.

... according to Stuart Katz, a psychologist at the University of Georgia, students who answered questions by guessing on the old S.A.T. reading-comprehensive section, got 38% of them correct, and the ones guessing on the new S.A.T. score 43% accuracy.

... college enrollment rose 3.4 per cent in fall 1990 to a record 13,951,000, according to the U.S. Department of Education. Undergraduate enrollment increased 3.9 per cent, to 12.1 million, while the number of full-time students grew 2.9 per cent to 7.9 million.

... in a recent survey by the Wisconsin Policy Research Institute, 89% of surveyed Wisconsin residents approved of grants by private colleges and universities based on academic performance, and 47% approved of scholarships based on racial or ethnic status.

... on April 15, 1991, Wisconsin started selling, for the second time, tax-free bonds designed for college bound students. State savings bonds worth $119.8 million are offered with a 6.7% yield after 15 years.

... the number of working poor households in Milwaukee County increased 44% during the past decade, according to the Social Development Commission.

... facing a $2.2 billion deficit in Connecticut, the General Assembly is recommending several controversial college mergers and steep tuition increases. Moreover, an estimated 1,167 college and university positions, including 418 faculty posts, could be affected.

... the 1990 census shows substantial increases over the past decade in the national and state Indian populations. The increases were 38% nationwide, 34% for Wisconsin.

... the annual amount that Milwaukee County spends on education has increased an average of 7.7% over the last 6 years, while state and federal aid support of total local school district spending has declined 4% since 1987.

... a recent study completed by the *Milwaukee Journal* found that Milwaukee's high school students who attended school at least 80% of the time had an overage cumulative g.p.a. of 2.183 on a 4.0 scale, more than a full grade better than the .995 average of those with poor attendance.

... in a similar study of Milwaukee high schools, it was found that the 1989-1990 attendance rate fell in 8 of the 15 high schools, and rose in only 3; while the number of suspensions at 12 schools rose above 105 per year; and the grade point average declined at 9 schools and rose at just five.

... the University of Michigan-Dearborn offers Detroit-area retirees a college education for only $50 a semester.

VOLUNTEERS NEEDED

The Environmental Scanning Committee would like to include all members of Cardinal Stritch College in the scanning process. Listed below are publications for which the College needs readers. All the listed publications are located in the Stritch Library. If you would like to be responsible for actively scanning any periodical, please notify the Office of Institutional Research (ext. 212, Peter Jonas) and you will included in the scanning process.

If you regularly read a publication and notice an article that you feel may have an impact on the future of Stritch, please send the article or a copy to the Office of Institutional Research (P.O. Box 360). Be sure to include the name and date of the publication. **The objective of the ESC is to have a systematic method of collecting information that affects the future of Cardinal Stritch College.** In this manner we can actively plan to make the future work <u>for</u> us rather than have the future happen <u>to</u> us. Your support is greatly appreciated.

Selected Publications for Which Scanners are Needed:

Across the Board, Administrative Management, Advertising Age, Aging, American Banker, American Health, Business Horizons, Center Magazine, The Chicago Tribune, Dun's Business Monthly, The Economist, Futures, The Gerontologist, Harper's, Liberal Education, Management World, Momentum, Personnel Journal, Public Opinion, Saturday Review, Scientific American, Social Policy, Society.

Members of the Environmental Scanning Committee: Ms. Susmita Acharya, Dr. Mama Boyle, Dr. Mark Fenster, Ms. Paula Friedman, Sr. Andree Gaspard, Dr. Peter Jonas (editor of Future Concerns), Fr. William Kohler, Mr. David Oswald, Sr. Mary Ann Polasek, Dr. Alexander Popovics (chairperson), Sr. Margaret Ruddy, Ms. Karen Walrath.

Appendix E

About The Seminar Leaders

JAMES L. MORRISON

James L. Morrison received his Ph.D. at the Florida State University in 1969. He was lecturer in sociology at the University of Maryland, European Division, and graduate assistant in sociology at the University of Munich (1964-65), instructor in sociology at the Florida State University (1968-69), and assistant professor of education and sociology at the Pennsylvania State University (1969-73). He moved to Chapel Hill as associate professor of education in 1973 and was promoted to full professor in 1977.

He has designed and implemented professional development seminars on planning and forecasting for the UNC-Chapel Hill Division of Continuing Education, H + E Associates (Great Britain), and the Fuqua School of Business at Duke University. In addition, he has made over 90 conference presentations in the last six years for such associations as the World Future Society, the Society for College and University Planning, the American Association for Higher Education, the American Educational Research Association, the Association for Community and Junior Colleges, the North Carolina Association for Institutional Research, the Southern Association for Institutional Research, the European Association for Institutional Research, the Association for Institutional Research, the National League for Nursing, and the American Association of School Administrators.

He has served as a planning consultant to a number of colleges (Caldwell, Hood, Lenoir-Rhyne, Saint Augustine's), universities (Alabama, Arizona State, Clemson, Tennessee, and the Virgin Islands), university systems (Maine), university continuing education centers (Georgia), community college systems (South Carolina), community colleges (Northwestern Michigan College), educational agencies (U.S. Department of Education and the North Carolina Department of Public Instruction), school systems (Orange County [Orlando] Public Schools) and educational consortia (Consortium for the Advancement of Public Education). In the corporate world, he is a planning consultant to Ethan Allen, Inc. His consulting activities focus on assisting organizations in developing environmental scanning/forecasting systems to augment their strategic long-range planning processes.

He served as vice president (Division J—Postsecondary Education), the American Educational Research Association, and as convener of the Forum on Environmental Scanning, The American Association for Higher Education. He also served two terms as a member of the Board of Directors, Association for the Study of Higher Education; chaired the special interest group on futures research, the American Educational Research Association; chaired the editorial board, *The Review of Higher Education*, and served as consulting editor of *The Review of Educational Research* and *The American Educational Research Journal*. He currently serves on the environmental scanning committee of United Way of America.

He is author and coauthor of over 50 publications focusing on the application of futures research techniques in planning and policy analysis, in-

cluding *The Alternative Futures Approach to Long-Range Planning: A Handbook for Army Long-Range Planners* (Department of the Army, 1990), *Applying Methods and Techniques of Futures Research* [with William L. Renfro and Wayne I. Boucher] (Jossey-Bass, 1983), and *Futures Research and the Strategic Planning Process* [with William L. Renfro and Wayne I. Boucher] (Association for the Study of Higher Education, 1984). The latter two publications and an article, "Establishing an Environmental Scanning Capability to Augment College and University Planning," have been cited as critical reading in *A Guide to New Planners* (Norris and Poulton, Society for College and University Planning, 1988).

He is a reserve officer (Colonel, USAR, Civil Affairs), serving as Deputy Commander, Individual Mobilization Augmentee, U.S. Army Research Institute for the Social and Behavioral Sciences. His assignments have included serving as a long-range planning consultant for the Office of the Deputy Chief of Staff for Operations, the Office of the Deputy Chief of Staff for Doctrine, and the Office Chief, Army Reserve. In July 1990, the President authorized the Secretary of the Army to award him the Meritorious Service Medal for training Army long-range planners in the alternative futures approach to planning model and for assisting the Chief, Army Reserve in using this model to develop the 1990-2020 Army Reserve long-range plan.

WILLIAM C. ASHLEY

William C. Ashley is founder and president of Ashley & Associates. He has twenty-five years of progressive and successful experience in leading market driven companies. He was chief architect of the Proactive Issues Management and Strategic Trend Systems at Sears, McDonalds and United Airlines.

Mr. Ashley has pioneered and copyrighted many of the proactive techniques in use in organizations worldwide. His proactive models for issues management and strategic trend analysis can be found in leading automotive, chemical, utility and not-for-profit organizations throughout the country.

Mr. Ashley is an organizational psychologist by education and experience, a merchant by training and a leading proponent of proactive management techniques by design and dedication. As an organizational psychologist, Mr. Ashley brings well-developed facilitation skills and techniques to the issues process. Over the years, he has assisted numerous cross disciplinary issue action teams resolve emerging issues resulting in savings to the organizations of many millions of dollars.

Mr. Ashley is a member of the U.S. Chamber Foundation's Council on Trends and Perspective. He served on the foresight in government committee for the U.S. Congress and the Global 2000 Task Force for the White House. He has shared proactive concepts with all levels of government including the White House, Congress and the Judiciary.

Mr. Ashley, as Immediate Past Chair of the United Way of America's Environmental Scanning Committee, continues to serve on that committee and is a member of that organization's Strategic Planning and Strategic Process Committee. He is a member of the Board of the United Way of Suburban Chicago, The United Way Crusade of Mercy and the United Way of Illinois. He chairs the strategic planning committee of the United Way of Suburban Chicago.